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ABSTRACT

This paper traces the development of research concerning effective schools and provides a critical, synthesizing overview of various research strands. Strands of research included are self-concept, teacher expectations, democratic-authoritarian leadership, various uses of the term "school climate," input-output production models (with particular emphasis on the 1966 Coleman Report), econometric studies, case studies, and status attainment literature. The paper stresses the converging lines of these various research perspectives and discusses methodological issues which were involved in the gradual change in the public's attitudes, from "schools do not make a difference" to "schools can make a difference." The issue of educability is raised with respect to possibilities for large-scale educational improvement based on the effective schools research. Two opposing values, economic efficiency and equity-effectiveness, are related to beliefs about the distribution of ability. It is suggested that educational policy and school improvement are determined more by political and economic choices than by research on state of the art school effectiveness. A 16-page bibliography is included. (JMK)

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THE HISTORY OF EFFECTIVE SCHOOLS RESEARCH: A CRITICAL OVERVIEW

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THE HISTORY OF EFFECTIVE SCHOOLS RESEARCH: A CRITICAL OVERVIEW[1]

Not so long ago the conventional wisdom regarding American schools was that "schools do not make a difference." In more precise terms, this meant that the primary determinant of achievement outcomes was family background as measured by socioeconomic status (SES) and ethnicity. Well-to-do children, primarily white, did well in school while disadvantaged students, especially minorities, did poorly. Schools had essentially no effect on these outcomes once SES and race were accounted for.

This conventional wisdom prevailed throughout the late 1960s and into the early 1970s. Although a variety of factors contributed to this belief, the major source of evidence was the Equality of Educational Opportunity Report (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966). In addition, the "failure" of President Johnson's Great Society, particularly the compensatory education programs of the 1965 Elementary and Secondary Education Act, designed to eliminate poverty and poor school achievement, helped confirm this conventional wisdom: schools are unable to overcome the effect of being disadvantaged.

Yet today the school effectiveness research has become one of the most dynamic areas of study in education. The message of this research is primarily positive: schools can make a difference.
Characteristics of exemplary schools that serve poor children well have been identified. And, by implication, if those characteristics are introduced to and adopted by typical schools, i.e., those in which disadvantaged children do

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poorly, then those typical schools should be able to transform themselves into copies of the naturally occurring successful schools.

Why this remarkable change in belief regarding the efficacy of our schools? What were the factors that influenced researchers, policymakers, and educators? And what are the major conclusions of research on school effectiveness?

This paper reviews these questions from historical perspective. A major focus of this analysis is to trace the development of various trends and fields of research as they have been integrated into the emerging school effectiveness literature. Because the research in these various fields is voluminous, an exhaustive survey of all of these areas here is neither possible nor necessary since numerous reviews already exist. Rather, this overview will be selective, integrating, and critical.

Of necessity, a historical frame of reference relies somewhat on secondary sources. But this paper goes beyond reviewing reviews. Classifying and organizing types of studies, addressing methodological issues, integrating diverse fields of research, and summarizing results of studies require familiarity with changing trends or shifts in meaning of concepts that become apparent in original research. Furthermore, although numerous reviews have been done in the various areas noted below, as well as in the immediate area of effective schools, none has attempted the historical and integrating perspective of this effort. Edmonds' (1978) excellent review does have a similar focus and his work is acknowledged, but the present review both extends and enlarges that work.

Thus this paper will first present a composite of the factors that research has identified as characteristics of effective schools. Then, the changing trends that led from "schools do not make a difference" to "schools

can and do make a difference" will be developed. The review will conclude with reference to the developing programs of school improvement based on the results of the school effects research.

Finally, a caveat is in order. Any critical, integrating review requires the advantage of hindsight and the opportunity to learn from the efforts of prior researchers. Any criticisms of particular work or insights coming from this paper must be viewed in light of social scientific advancements in the study of schools and the processes which affect teaching and learning within them.

Characteristics of Effective Schools

The notion that schools can and do make a difference requires clarification and qualification. First, the dismal state of most schools that serve poor and minority children in America remains sadly unchanged. The simple truth is that for the vast majority of schools, family background characteristics are still the determining factor in achievement outcomes. As the Coleman Report (1966) and many other studies have indicated, the correlation between SES/race and achivement is high. especially given the range of correlations found in social science. Most schools fall within the expected and rather narrow range of the SES/race-achievement regression line: low achievement for low SES, minority schools gradually increasing to high achievement as SES rises and percent minority decreases. The implied connection between social class and race is not causal and by no means suggests that the low SES population is all minority; rather, the slash reflects the empirical reality that minorities in the United States are highly overrepresented among the poor compared to their proportion of the country's population.

Second, the definition of what an effective school is and what criteria should be used for evaluation are not settled issues. Two of the issues that will be discussed below include: measuring only achievement versus using multiple criteria; and an absolute level of performance (and where to peg that level) versus a continuum of effectiveness.

Third, despite confusion over definitions and the fact that most disadvantaged schools are far from effective, most researchers are now in agreement that atypical schools or "outliers" from the SES/race-achievement regression line do exist. Research on these outlying schools is a major, but not the only, aspect of the effective schools literature.

Finally, although the results of various strands of research on school effectiveness demonstrate some remarkable commonalities, there is no single set of characteristics of effective schools upon which all researchers would agree. Further, the various elements which have been identified do not appear in every study, nor with equal strength of association with outcomes in different studies. In short, schools are complex social systems in which different elements or characteristics combine in different ways and different combinations in various schools.

Despite these qualifications, numerous researchers have summarized the characteristics that seem to be associated with school effectiveness. In essence, these characteristics form a composite "ideal type" with the understanding that no single school is likely to exhibit all of the factors.

The outline which is given here is taken from Creating Effective Schools (Brookover, Beamer, Efthim, Hathaway, Lezotte, Miller, Passalacqua, & Tornatzky, 1982, p. 28-31). Three aspects of the school--the ideology, the organizational structure, and the instructional practices--are considered to be the major factors that contribute to an effective school learning climate.

A. The Ideology of the School

1. Beliefs and attitudes of the professional staff

a) All students can learn the school's objectives

b) All students are expected to reach high standard of achievement

c) Teachers can successfully instruct all students in the school's objectives

d) Individual and schoolwide achievement test performance is an appropriate goal and measure of school success

e) Staff norms of high performance promote achievement and counter negative faculty attitudes and performance

f) The staff is committed to producing high achievement for all students, no matter what it takes

2. Students' perceptions of and behavior regarding the school learning climate

a) Norms of high achievement expected of all students

b) High self-concept

c) Low sense of academic futility, i.e., students perceive that their efforts matter and they control their academic and career success or failure

B. The Organizational Structure of the School

1. Role expectations for appropriate behavior defined in terms of achievement rather than non-achievement criteria

a) "Effective teacher" defined as instructing all students to high achievement

b) "Good student" defined as high achiever

c) "Effective principal" defined as instructional leader who promotes effective instruction and high achievement for all students

2. Reward structures and systems in the school (and district), both explicit and implicit, are centered on achievement

a) Teachers are recognized and rewarded for producing high achievement for all students

b) Students are recognized and rewarded for high and improved achievement

c) The principal is recognized and rewarded for promoting a high achieving school in which all students master instructional objectives

3. Stratification of students is minimal

a) Flexible heterogeneous grouping is used rather than homogeneous segregation by ability, race, or socioeconomic status

b) Test data is used for diagnostic purposes rather than sorting and selecting between levels of students

c) Compensatory and special education programs help students "catch up" to grade level and are coordinated with (and preferably conducted in) the regular classroom

4. Differentiation of the instructional program is minimal

a) Common instructional objectives are established for all students

b) Common expectations are set for all students

c) Common instructional materials are used for all students

d) Common role definitions are held for all students

5. Parent support and involvement are structured by the school to facilitate school achievement goals

C. The Instructional Practices of the School

1. School goals and instructional objectives

a) School goals are clearly stated, and first priority is attainment of mastery of grade level instructional objectives by all students

b) Standards for mastery of instructional objectives for all students, and procedures for certification of same, are clearly stated

c) Grade level instructional objectives are clearly stated and reflect priority of basic skills achievement

d) The professional staff recognizes and accepts the priority of mastery of the instructional objectives by all students

2. Effective teaching based on structured, direct instruction (Brophy, 1979; Good, 1979) incorporated into a mastery learning strategy (Bloom, 1976)

3. An orderly, work-oriented atmosphere reflecting effective school and classroom discipline

4. A high percent of academic engaged time (Anderson, 1981) for all students

5. Use of academic team competition to promote peer learning and motivation (Slavin & DeVries, 1979)

6. Effective use of reinforcement principles, contingent upon expected learning conduct (Brophy, 1981)

7. Effective use of assessment data

   a) Ongoing monitoring of student progress, including diagnosis and feedback to pupils

   b) Accurate record keeping of mastery of objectives for all students

   c) Utilization of diagnostic information in planning corrective instruction for all students

   d) Schoolwide data used for evaluating and improving the school's instructional program

The above outline represents a state of the art summary of the current effective schools movement, that schools can and some do make a difference. But this buoyant belief in the efficacy of our schools has changed considerably in the past decade. So too has the research on which those beliefs are based.

Historical Context

While it is true that our confidence in our schools had been shaken by the late 60s and early 70s, and that the American faith in education has been somewhat restored by the upbeat effective schools movement, the full extent of such changes must be viewed in historical context.

From the earliest colonial days, Americans have viewed this country as the land of opportunity. Up until the twentieth century, the expanding Western Frontier was seen as the Promised Land. Given enough courage to resettle

westward, and enough effort and ability, success was available to all. But as Bowles and Gintis (1977) suggest, the coming of the industrial revolution, along with the closing of the frontier, required a new source of upward mobility. As the secondary schools developed in the early 1900s, education gradually assumed this mantle.

This new road to social mobility and golden opportunity was tied into the growing industrial work force, the waves of immigrants, conceptions of America as the melting pot, stronger social control and preparation of workers for accepting the rigors of the assembly line, and the need for a means of allocation and selection of students into an increasingly stratified occupational hierarchy (see, e.g., Callahan, 1962; Katz, 1968, 1971; Tyack, 1974; Weinstein, 1968).

Out of this mix of influences, and propelled by the developments in the science of ability testing by E. L. Thorndike and others (Blum, 1978; Karier, 1973; Marks, 1980), came the conception of equality of educational opportunity. The public schools were to provide equal access and opportunity to rich and poor alike; each individual has the chance to perform to his capability. Based on his achievements in school, the young man moved into the occupational hierarchy at a level commensurate with his ability (gender used intentionally). Thus equality of educational opportunity came to be equated with the American Dream.

Although this explanation is both much simplified and truncated, it does represent the American belief in social mobility and education. But this system has never operated very well, if by "well," it is meant the actual provision of social mobility to large numbers of the poor. School success has been, and still is, primarily determined by social class. And yet, American faith in education has been virtually unshakable throughout most of the

twentieth century. A complete analysis of this phenomenon lies beyond this paper, but a few remarks are necessary to explain the disillusionment that followed the failure of President Johnson's Great Society programs.

Legitimating the American Dream

In any economic-political system, there are certain broad "truths" that the public accepts as a part of the conventional wisdom. The American Dream is central to those truths in this country. But as defined above, the American Dream has never produced reality that matches rhetoric. Still we believe. Why?

Legitimations can be defined as functions or processes that justify and rationalize the basic tenets or "truths" of a socio-political system. These basic tenets are often highly ideological in nature and are generally tied into the complex of beliefs that define patriotism and the "American Way." Further, these ideological tenets and the processes that support them are so pervasive that almost everyone "experiences" the reality of the process and its consequences. Thus legitimating functions persuade as well as justify. Perhaps an even more important factor, however, is that they persuade morally and unobtrusively rather than with force or in a contentious manner. In this sense, legitimating processes are so pervasive, subtle, and morally righteous that they become a part of our very consciousness, shaping not only how we think and value, but also limiting our ability to even conceive of alternatives or opposing positions.

The quintessential legitimator of the American Dream is our educational system. And the primary aspect of schooling is the predominance of the belief in IQ and individual differences. It has been suggested that regardless of whether ability is viewed as mainly genetic or mainly environmental (or some combination of the two), the vast majority of Americans accept that individual

differences in ability are responsible for success and failure in both school and life (Aronowitz, 1974; Gartner, Greer, and Riessman, 1974; Persell, 1977). These differences reside within the individual; schools provide the opportunity to perform for those that have the ability. For those who can't, or won't perform, their failure can't be helped. Of course, the primary means of instituting this selection for individual differences is some form of ability grouping, beginning with reading groups in elementary school and continuing with tracking in high school. Scientific measurement in the form of norm-referenced aptitude and achievement tests guarantee objective and impartial results. Everybody "knows" that some children do better in school than others. The system is so effective that very few are not convinced that their lot in life is not consistent with their "ability."

The fact that everyone knows someone who has "made it" also contributes to acceptance of the American Dream. The Horatio Alger success story, the self-made man, continues to be popularly believed, perhaps because the publicity surrounding such cases makes them appear much more prevalent than they actually are, and despite the fact that the "theory of random walk" (Thurow, 1980) suggests that being in the right place at the right time (luck) explains much of the occurrence of quickly made wealth. The analysis of Jencks, Smith, Acland, Bane, Cohen, Gintis, Heynes, and Michelson (1972) also suggests that luck is one of the greatest determinants of adult economic success, so much so that schooling explains very little of the observed variance in economic success in their study.

But other factors apparently add to the legitimating of the American Dream. These are connected to the unprecedented rising standard of living in the post World War II period. The economic boom brought a growing middle class, steadily rising educational requirements, and increasing affluence for

almost everyone. The schools were seen to be directly associated with the social mobility that was perceived to be occurring, including use of the G.I. Bill, increasing numbers who graduated from high school and went on to college, and the preparation for vocational/technical jobs that required even higher educational certification.

What apparently went unnoticed was that compared to other members of one's own generation, very little educational mobility had occurred. The perceived mobility was in large part simply creeping credentialism, i.e., greater educational requirements for the same jobs that the previous generation did with less education (cf. Berg, 1971). Likewise, the success of the American system resulted in intergenerational status mobility but very little actual mobility relative to one's peers. Still, with everyone on an upward escalator, and with the schools seemingly at the center of this success, the American Dream was experiencing its finest hours, including public faith in education. Whyte's (1957) classic study, The Organization Man, captures much of this upbeat mood. The concomitant focus in the schools on narrow, vocationally oriented technical skills and on social or life adjustment classes was consistent with anticipated jobs in the increasingly important corporate structure.

Growing Disenchantment with the Schools

The coming disillusionment with the schools in the 1960s was not without foreshadowing in the 1950s, however. Critics such as Arthur E. Bestor and Admiral Hyman G. Rickover were among those either affiliated or sympathetic with the Council for Basic Education (Brody, 1972; Spring, 1976), an organization that rallied against the mindless and anti-intellectual quality of education of the late 1940s and 1950s, particularly the very qualities

revered by the organization (see Whyte, 1957). Education classes and teachers colleges took the brunt of this criticism for being too easy and for failing to identify and challenge the bright youngsters who would become the scientists that would help us win the Cold War with Russia.

The 1957 orbiting of Sputnik exacerbated this criticism. In 1958, Congress passed the National Defense Education Act, which was to provide a major impetus for improving education in math and science. In short order Bruner's (1960) The Process of Education touted curriculum reform based on the process of inquiry-based learning while Conant's (1959) study, The American High School Today, recommended strengthening the comprehensive school by improving the preparation of the academically talented (not more than the top 25 percent) in science, math, and foreign language.

Another area that foreshadowed the problems of the 1960s was the desegregation issue. The landmark decision Brown v. Board of Education (1954) in school desegregation not only drew attention to the legal and social inequities in the United States but also to the dearth of empirical research on the schools (Brookover, 1982). Brown, the electronic media, the growing affluence of the country, the concomitant rising expectations of the Negro population, and the migration of rural southern blacks to city jobs in the north were some of the factors which led to the stirrings of the Civil Rights movement in the late 1950s. Howard (1974) provides an excellent overview of this movement.

Public Confidence Versus Research Findings

Although the warning signals that all was not well with the educational system were evident throughout the 1950s, the public's confidence in education remained. Foremost in this confidence was the faith that education was the

major vehicle for social mobility and occupational success. Policymakers too believed in the efficacy of education. The Brown case was itself predicated upon the need for equal education if equal opportunity was to be a reality.

On the other hand, sociological research had consistently demonstrated the extent to which school success was linked to social class. Much of this work was directly tied to studies of stratification; such classics as Who Shall Be Educated? (Warner, Havighurst, & Loeb, 1944) and Elmtown's Youth (Hollingshead, 1949) made clear that for most youth, social class was the predominant factor in the quality and amount of education they received. Social mobility through the schools was reality for only a very select few.

Empirical studies of schooling were conducted in the 1950s, but for the most part, this field had not yet attained prominence or, attracted much attention. Brim's (1958) review was set primarily in a functionalist framework. British researchers were somewhat ahead of their American counterparts in studying the schooling-social class nexus (see Floud & Halsey, 1958; Halsey, Floud, & Arnold, 1961; Karabel & Halsey, 1977, for overviews). Shortly therafter a major work by Sexton (1981) appeared in America, leaving little doubt about the continuing strong association between social class and education.

The question can be raised, Why did public confidence in education remain so high despite the empirical evidence suggesting that social mobility via the schools was largely a myth? The question must be addressed at two levels--the specific group in question and the period of time.

For the public, the years from the mid-sixties into the eighties brought increasing awareness of the research findings, decreasing number of parents with school age children, and increasing disaffection with the schools relevant to discipline, drugs, busing, or declining test scores. Yet these

factors only explain the current crisis of confidence in the performance of our schools. Gallup (1982) and other surveys indicate that faith in education for the country's future and for individual success have continued unabated throughout this period.

For policymakers, awareness is the major factor. The knowledge gap between research results and public officials has been greatly reduced by using social scientists as governmental staff and consultants (Wirt & Mitchell, 1981). The increase in the number of social science staff during the Kennedy and Johnson administrations (see Halberstam, 1969), along with the high visibility and controversy surrounding the Coleman Report (1966), resulted in a significant change: policymakers were finally getting the word that family background, not the schools, was the primary factor in explaining school success or failure. Prior to the Coleman Report, that simply had not been the case.

For educators, the situation has really not changed much. As long ago as the early 1950s, Becker (1952) demonstrated that teachers recognized and acted on social class differences with respect to expectations for outcomes; a resignation that most lower class children were not going to do well was present then and now. The findings of the Coleman Report (1966) brought no real surprises to most teachers, although some negative reaction may have been associated with the public criticism that schools, and consequently teachers and administrators, were doing little more than reproducing the social class background of their students.

For researchers, the major change from the buoyant 1950s to the more realistic 1960s was simply the increasing recognition of their work. The findings had not changed; access to policymakers and publicity of the results increased significantly, however, primarily because of the controversy which surrounded the Coleman Report (1966).

Schools Do Not Make a Difference

The previous section has described the mood of the country regarding education in the post World War II boom. An anomaly was discussed: an overwhelming belief in the efficacy of schooling concomitant with the fact that the schools for the most part simply reproduce the social class system by serving as a means of allocation and selection of students. This section looks at the evidence that suggested and continues to suggest that schools in fact do not make a difference, and at theoretical models that were and continue to be used to analyze the problem.

The Structural-Functional Paradigm

Structural-functionalism maintained dominance in sociological theory throughout the 1950s and 1960s. Merton's (1957) seminal work is representative of this field; briefly this position holds that behavior in the vital functions of society, e.g., transportation, big business, education, religion, etc., is related to the institutionalized rules, regulations, traditions, and physical technology that define those areas. In other words, structures provide the behavioral guidelines which define and shape institutions, e.g., child care and reproduction (the family), communication, or schooling. A major tenet of this work is that structures often perform vital but unrecognized and unintended functions in society. Merton (1957) terms these "latent" as opposed to "manifest" functions, which are intended and recognized. Structures can be macro level in scope, e.g., schooling in the wider society, or can operate at micro levels, such as grouping practices and policies within each school. In the latter instance, structures are comparable to formal organizational rules. At both macro and micro levels, much of the "structure" which controls mass behavior performs in a latent manner. Sociological theory, coincidentally, should inform and make explicit

the actual functioning of the structures which comprise the various institutions and society as a whole.

The classic application of this theoretical model to the schools is Parsons' (1959) analysis of the classroom. The major function of schools is to sort and select for talent in accord with society's stratified economic needs. Educational selection is largely determined by individual ability and accomplished by various means of grouping. Parsons (1959) suggests that this meritocratic system is a vast improvement over traditional societies which use ascriptive criteria for selection. Individual talent and achievement, rather than one's position at birth, determine one's fate.

This is fundamental to understanding research on schools. Throughout the fifties and sixties, the vast majority of research that was conducted on schools, social class, and social mobility was framed within the structural-functional theoretical model. Essentially that model is based on the assumption that individual differences in ability result in varying levels of educational and occupational attainment. The consistent results of this research, which demonstrated that schools accounted for very little difference in achievement once family background ethnic and social class characteristics were accounted for, were not surprising. Schools could hardly be expected to overcome the natural abilities that children brought to school with them. Simply put, some schools were better than others because they had a "better" mix of children than other buildings.

At the same time, it would be inaccurate to suggest that the causal explanation of the differences in ability was totally genetic. Many of the studies clearly used an environmental explanation. But whether genetic or environmental in cause, individual differences in ability remain the key to understanding the assumptions which underlie this research.

The Status-Attainment Literature

Much of the research that was conducted in the structural-functional paradigm falls under the heading of status-attainment studies. Generally speaking, these studies looked at the relationship between origin of social class, measured ability, schooling, and occupational status as an adult. However, there were many variations of this basic pattern. Some of the studies were cross-sectional, while others used longitudinal data. Data bases ranged from large scale national samples to smaller subsamples which focused on one or a few schools. Attitudinal measures, often in the form of aspirations, and peer group influence were sometimes included. The measure of schooling also varied, from years of school completed to data on grades, achievement tests, or track enrolled in.

The heart of the status-attainment literature is the theoretical model of Blau and Duncan (1967). This model is actually an empirical extension of the heuristic structural-functional position as exemplified by Merton (1957) and Parsons (1959). Using a national sample, this study provides major evidence for the meritocratic tradition; findings indicate that while social class has some influence on educational attainment, final status attainment is almost totally mediated through educational performance. Duncan, Featherman, and Duncan (1972) provide a further analysis using this model.

Closely related is the Wisconsin model of status-attainment. Based on a longitudinal sample of 1957 Wisconsin high school graduates, the work of Sewell, Haller and Portes (1969) is representative of this research, which extends the Blau and Duncan (1967) work. The model emphasizes the social-psychological effect of aspirations as mediated through significant other interactions. This research is extensively reviewed in Hauser's (1971) study of 1957 data on high schools from Nashville. This analysis, and these

studies in general, conclude that variance in achievement between schools was small (15-30%) and was due to difference in the mean SES composition of the student body from one school to the next. Hauser (1971) argued that there was no evidence for any contextual effect in schools, i.e., what happened in a given school was simply the aggregation of the individual abilities and social class background of the students in the school. If the students in a school were different, then outcomes would differ accordingly, but a group or school effect over and above the summed individuals was not evident.

Haller and Portes (1973) provide an excellent overview and comparision of the Blau-Duncan model versus the Wisconsin-model, concluding that the social-psychological enhancement of the latter model adds slightly to its explanatory power but that overall there is no great difference between the two models. Hauser, Sewell, and Alwin (1976) again conclude that high schools make little difference (1-2% of the total variance) after controlling for differences in the aggregate characteristics of the student body from one building to the next. Work in the status-attainment field continues. Continuing refinements of the models and the specification of variables are discussed in a special issue of Sociology of Education (1983). A speculative review by Campbell (1983) in that issue looks at various criticisms of this field and suggests directions for further research.

But as Brookover et al. (1979) and Persell (1977) note, these status-attainment studies use data in which the average SES of the student body is used as a proxy for the climate in a school. No direct measurement of the social-psychological processes in the school is available, a caveat that Hauser et al. (1976) note but dismiss as unimportant. But as will be shown below, this methodological point can result in widely different conclusions about the effects of schools. The "no school effects" of the status-

attainment literature has not gone unchallenged.

In a related body of literature, high school students' aspirations for college or job were analyzed for impact on actual college attendance or vocational decision. This review by Bain and Anderson (1974) looked at the social or school climate of the school as it related to future outcomes, but like the work on status-attainment models, aggregate SES of the student body was used as a proxy for school climate (see Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979; Lezotte, Hathaway, Miller, Passalacqua, & Brookover, 1980, on this issue).

The Coleman Report

A major event in United States educational history was to provide a new research direction that provided an alternative to the status-attainment/ structural-functional model. In 1964, a coalition of blacks, liberals, and northern moderates passed the Civil Rights Act. This act called for a massive survey to determine the factual basis of segregation and inequality in American schools. The presumed inequalities to be found between black and white schools in the South were to be used as the basis for Justice Department enforcement of the Brown ruling. That study, which became known as the Coleman Report (1966), was to become a landmark in school effects research.

Prior to the Coleman Report, schools were evaluated primarily by the amount of inputs which they received. These inputs were factors that could be measured in quantitative terms: teacher salaries, number of volumes in the library, per pupil expenditures, age of buildings, size of science labs, years of faculty experience, etc. It had always been assumed that inequalities in these areas were responsible for inequitable outcomes. The Coleman Report showed otherwise. These input factors had virtually no relation to

achievement. On the other hand, the major factor in achievement differentials both between schools (15-35 percent of the total variance) and within schools (65-85 percent of the total variance) came from family background as measured by SES and race. Schools had little effect on achievement after SES and race were controlled.

At first glance this seemed to confirm the status-attainment literature. But there were differences as well as similarities. First, there was some school effect, even if not much. Second, some of the school factors which were related to differences in outcomes were social-psychological and qualitative. After controlling for the background demographic variables, the student body composition as measured by SES and percent white explained the greatest proportion of achievement variance. So far, these results were not all that different from the prevailing research in the area. But other findings in the social-psychological realm were to become a major influence on future research. The students' perceptions of their control of their fate (sense of control) was the next greatest factor in the school, and this factor appeared to be somewhat independent of the individual family background characteristics of the school. For teacher variables, the most important was a measure of verbal ability. These findings were to mark the beginning of a research effort to find the variables, in large part social-psychological, which accounted for differences in school quality. Smith's (1972) reanalysis of the Coleman Report, focusing on teacher perceptions of tracking among other factors, foreshadowed much of the ensuing emphasis on expectations and perceptions in research on school effects.

Third, the Coleman Report became a major policy instrument. The subject of extreme polemics, ongoing policy debate, and numerous reanalyses (e.g., Harvard Educational Review, 1968; Mosteller & Moynihan, 1972), the Coleman

Report achieved educational and public prominence that the theoretically focused status-attainment work and other sociological research never had. Thus in large part the controversy generated by the Coleman Report led to the later emphasis on the social-psychological factors in the school.

The War on Poverty

However, the findings of the Coleman Report were not the only factors involved. At about the same time, Johnson's Great Society War on Poverty was becoming the major force regarding educational policy. Two underlying premises guided this policy, which resulted in programs such as Headstart and Title I remedial assistance (Ryan, 1976).

First, liberal politics and functional sociology, as represented by educational and manpower development policies (see Spring, 1976) and the status-attainment work, assumed that education was the primary factor in producing the talent needed for American technology and the primary avenue to social mobility for bright, energetic individuals from all levels of society. In short, education was thought to be the key to a meritocractic society.

Second, the War on Poverty was based on a particular belief: the environment in which lower class, primarily black, children grew up precluded their becoming a part of middle class America, not because of a lack of native ability, but because the "culture of poverty" (Lewis, 1966) produced in them a value system which was debilitating. These children of poverty acquired values that moved them to desire immediate gratification, a life of welfare and promiscuity, an aversion to hard work, and a dislike of school and authority, as opposed to the middle class virtue of hard work, delayed gratification, strong family life, success in school, and respect for authority.

The increasing awareness among policymakers of the plight of the disadvantaged, and the increasing reliance on an environmental rather than a genetic explanation for poor school performance and poverty, can be partially traced to a series of influential works in the early sixties (e.g., Harrington, 1963; Merrill-Palmer Quarterly, 1964a, 1964b; Moynihan, 1965; Passow, 1963; Riessman, 1962). The War on Poverty remedial educational programs were to provide the extra boost needed to overcome these effects of poverty. Baratz & Baratz (1970) provide an excellent overview of the thinking and social science biases of that period.

In this context, the Coleman Report, with its findings that schools had little impact over and above family background and that achievement was highly associated with race and SES, was taken by many as confirmation of the culture of poverty hypothesis.

Challenging the "No School Effects" Findings

Many researchers, however, remained unconvinced that the results of the Coleman Report or the culture of poverty thesis were valid. Over the next few years, both were to be critiqued widely: the Coleman Report, first in the series of policy debates and reanalyses noted above and later in the research on effective schools described below; the culture of poverty in a series of works which questioned the premises, the data, and the causal ordering between the imputed negative values and the dismal economic circumstances. Ryan (1976) is perhaps the most widely known critique of this middle class ideology of "blaming the victim," but his impassioned expose of the self-gratifying, conscience-salving belief system (the liberal could help the victim of poverty improve or change his/her deficient attitudes or skills while ignoring the structural inequities in society that cause the problem initially) is

supported by several more staid social science critiques (e.g., Baratz & Baratz, 1970; Leacock, 1971; Persell, 1977; Stein, 1971; Valentine, 1968, 1971).

As of this date, it is safe to say that most serious social scientists accept the cultural deprivation explanation as bankrupt; recent scholarly analyses by, for example, Feuerstein (1979) and Gordon (1981) furnish further support for this position. It would be a mistake, however, to assume that beliefs in cultural or genetic deficits are dead. These concepts still hold considerable influence among the public, policy makers, and educators alike.

But regardless of today's educational beliefs, the critique of this thesis was one of several strands of research which led to the current emphasis on social-psychological processes within schools. At least three other conceptually distinct, yet related movements, can also be identified.

The Self-Fulfilling Prophecy

First, the relationship between teacher expectations and student achievement, while a central aspect of research on school learning climates and effective schools (e.g., Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker, 1978), has also been an independent movement. For example, two early works dealt with low expectations in ghetto schools and consequent negative effects for students and communities (Clark, 1965; Harlem Youth Opportunities Unlimited, 1964). In addition to such early work in minority communities, perhaps the popularizing event in this field was Rosenthal and Jacobson's (1968) Pygmalion in the Classroom, which was a follow-up to earlier work on the experimental bias effect (EBE) in experimental psychology (see Rosenthal, 1968, for a review). His documentation of this effect in animal

studies led to the now famous case in which selected, randomly chosen students were designated as "bloomers" to the faculty in Oak School. Later retesting showed that the I.Q. of these "bloomers" went up significantly more than the remainder of the class. Although the original study has been severely critiqued on methodological grounds, the self-fulfilling prophecy in the classroom became a major research area.

Questions which remain in the field now have to do with how expectancy results are transmitted (see Brophy & Good, 1974; Persell, 1977, for reviews) or with the causal ordering of teacher expectations and student results (e.g., Crano & Mellon, 1978) rather than with the existence of the effect. Teacher expectations are now widely recognized as one of the primary factors among the social-psychological processes which account for variations in quality between schools. For a recent summary and prospectus in this area, see Cooper and Good (1982).

Organizational Studies

A second source of emphasis on social-psychological processes in schools is closely tied to the literature on organizations. Much of the work on educational administration has been heavily influenced by the human relations model of organizations. This tie can be seen in the concern for the degree of "good feelings" in the relation between principal and staff and among staff members. These good feelings purportedly result in higher job satisfaction with consequent better performance by staff. Perrow (1979) provides a description and critique of the human relations school of thought in which he notes that implicit in this model is a concern for social control. This is consistent with Mills' (1959) classic critique of the human relations theorists. (Clearly a major criteria for evaluating schools has been social

control, both well disciplined students and a satisfied, accepting staff.)

In schools, this thrust has been evident in the large body of studies on school climate. Throughout the sixties and into the seventies, school climate research has focused almost exclusively on the affective dimension. Miller (Note 1) has traced the development of this emphasis on the affective realm, as opposed to achievement, to the daily concern and responsibility over authority relations, for both principal-teacher and teacher-student interactions, consistent with the work of Corwin (1967), Dreeben (1968, 1973), Sarason (1971), and Schlechty (1976). The most commonly known and widely studied measure of school climate, the Organizational Climate Description Questionnaire (OCDQ) by Halpin and Croft (1963), focuses on adult affective responses.

On the other hand, despite the affective rather than cognitive bias, the organizational-school climate studies did concentrate on processes and structures within the schools, as opposed to the quantitative input measures typical of much educational research prior to the Coleman Report (1966). To that extent, and to the degree that these early school climate studies were eventually to lead to an emphasis on learning (see below, "Social-Psychological Learning Environment"), this strand of research contributed to the questioning of the conclusion that schools did not make a difference.

Self-Concept and Achievement

The third related area which contributed to the social-psychological emphasis in studying schools was the work on self-concept. Much of this work has dealt with a global definition of self, sometimes termed "self-esteem" (Coopersmith, 1967; Rosenberg, 1965) and is less directly related to schools

and achievement. But a considerable number of studies have investigated self-concept of academic ability or a similar construct. The work of Brookover and associates at Michigan State University is particularly germane here.

This literature is reviewed and the results of a longitudinal study of the relation of self-concept of ability to achievement in high school are reported in Brookover, Paterson, and Thomas (1962), Brookover, LePere, Hamachek, Thomas, and Erickson (1965), and Brookover, Erickson, and Joiner (1967). The significant findings of this study for the present review are contained in the relationship between the evaluations of student ability held by significant others, students' perceptions of evaluations of their ability by significant others (the primary factor in the conceptualization of self-concept of ability), and school achievement. In sum, self-concept of ability functions as an intervening variable between signifcant other expectations and evaluations of students on one side and student achievement on the other. The construct also functions as a threshold variable, i.e., a necessary but not sufficient factor in high achievement. The concept demonstrated very little reduced effect on achievement when measured intelligence and SES were partialled out. Furthermore, changes in the level of expectations and evaluations were highly associated with changes in self-concept.

This work on self-concept of ability is antecedent to the conceptualization of the school learning climate. Brookover and associates incorporated the theory from their work on self-concept into their development of the social-psychological social climate variables. The framework was sociological symbolic interactionism as derived from the work of Cooley (1902) and Mead (1934) and described by Brookover et al. (1967), Brookover and Erickson (1975), Persell (1977), and Rose (1962). Likewise, empirical

findings on expectations for and evaluations of students from the self-concept studies noted above were utilized for the social-psychological measures of the school social climate. A description of this developmental process is presented in Brookover and Schneider (1975). More recent empirical and theoretical work on self-concept can be found, respectively, in Purkey (1971) and Webster and Sobieszek (1974).

Other Factors

The historical background described above is not intended to be exhaustive. Indeed, one could argue that important factors in the development of research on effective schools have been left out. In particular, the research on effective teaching (reviewed in Brophy, 1979) has not been included. Gage (1978) summarizes much of this work and the assumptions of the related process-product paradigm. Although the delivery of instruction by staff is one component of school processes, the actual teaching process lies at the individual level of analysis and is beyond the scope of this review. Furthermore, as Goodlad (1975) notes, a full understanding of individual teacher behavior is impossible without analyzing the contextual constraints and normative forces embedded in the social system in which the teacher works.

The above outline, although not comprehensive, provides a background from which to review current work on effective schools. It is important to note that influences and trends in the social scientific study of schools are closely related to the forces in the wider society which are reflected in efforts to change and improve the schools. An historical overview on the relation between attempts to reform our secondary schools and studies of the effectiveness of high schools (James & Tyack, 1983) is a case in point. Thus the attempt to understand these societal influences on schooling necessitates

the use of a framework for studying organizations which focuses on historical and external environmental factors. The emphasis in this review on historical trends as well as on studies directly related to the current problem reflects this perspective.

The School Effects Literature

The conclusion by Coleman et al. (1966) that schools make little difference on achievement independent of family background characteristics has been discussed in historical perspective. Although earlier sociological studies had clearly shown that family background characteristics were the major determinants of achievement, educators in general still had a rather naive faith in the efficacy of schooling. Another factor in this general faith in education was the continued acceptance of dollar-related input factors as the key determinant of school quality. The Coleman Report (1966) laid to rest this myth and received the kind of attention that educators could not ignore. Coupled with the Great Society's War on Poverty and its increased publicity on the educational and economic plight of the poor, the Coleman Report can be looked at as the beginning (symbolically) of the widespread conclusion that schools do not make a difference.

On the other hand, the research on effective schools is predominantly hopeful. Social science has progressed to a point that former findings are now questioned and conclusions have come about face. This section follows that shift through the development of the school effects literature.

As noted above, the Coleman et al. (1966) research has been extensively reanalyzed and critiqued (e.g., Harvard Educational Review, 1968; Mayeske, Wisler, Beaton, Weinfeld, Cohen, Okada, Proshek, & Tabler, 1972; Mosteller & Moynihan, 1972). Despite all of the critiques, the major findings of the

report are now accepted as basically sound. The debates and further research spurred by the controversy produced advances in both understanding and methodology on the factors which affect school quality. These advances will be reviewed below.

Input-Output Studies

Large scale survey data bases which compare student and family background and school characteristics to some outcome measure, usually achievement, have been the mainstay of educational research on schools in both sociology and economics. It was this kind of research, of which the Coleman Report is the prototype, which had led to the dismal conclusion about schools in the mid 1960s. Most of these studies would fit easily into the structural-functional paradigm discussed earlier and some could be classified as status-attainment studies.

Another major study by Jencks et al. (1972) also concluded that schools had virtually no effect on adult income and earnings. Family backgrounds and luck appeared to be the key factors. Like the Coleman Report (1966), this study received much public attention and strongly reinforced the notion that schools did not make much difference. But about the same time, an extensive and critical study appeared, one that was not widely known. Averch, Carroll, Donaldson, Kiesling, and Pincus (1972) confirmed that family and student background characteristics were the only variables that consistently correlated with achievement. This conclusion was qualified, however, by four important limitations of the research reviewed: (1) outcomes other than standardized cognitive achievement were rarely used, (2) cost analyses of various factors were seldom conducted, (3) very few studies had attempted to measure directly the behavioral and attitudinal processes within the school,

and (4) operational definitions of the complex processes in the school were crude at best. Averch et al. (1972) then suggested that there was a need to explain the extremes of good and bad (emphasis added) rather than merely looking at overall averages and that future research should concentrate on the transactions within the school between staff and students.

Both economic and sociological studies have moved in this direction in the ensuing years. Several major studies and three recent reviews all point to similar findings: that selected factors in the school do result in differences in the level of achievement, even with demographic variables controlled.

Centra and Potter (1980) present a structural model of school and teacher variables which affect learning outcomes. Their review contributes to an understanding of these factors within schools but has some serious shortcomings from the organizational perspective presented here. Centra and Potter suggest that achievement variance between schools is so small in comparison to within variance that future research should concentrate on the classroom level and on the individual teacher-student relationship. While this level of analysis can be fruitful, analysis between schools and at the district level can hardly be written off. Two glaring errors perhaps contribute to this questionable conclusion.

First, the Centra and Potter (1980, p. 274) model shows no predicted causal relation between within-school conditions and teaching performance, instead suggesting that all influence from within-school conditions is mediated through demographic teacher characteristics. In the absence of empirical evidence to support this exclusively indirect effect, this claim appears questionable, given the extensive work in the area of teacher expectations noted above. Second, their review of between and within school

studies is deficient. They rely almost solely on quantitative production function studies; completely missing are the social-psychological studies which have measured attitudes, expectations, beliefs, values, etc. (to be reviewed below). In addition, only one (a minor one at that) study of atypical schools is noted. Thus the crucial studies, which indicate that certain combinations of within-school transactions, beliefs, and structures can lead to between-school differences, are omitted.

The second recent review of input-output analyses by Glasman and Biniaminov (1981) also offers a structural causal model. The review is an excellent summation of this literature, but as the authors point out, these quantitative studies do not deal adequately with the dynamics of the teacher-student relationships in terms of expectations and transactions. The model offered does provide for the influence of student attitudes on school outcomes, e.g., student self-concept or locus of control, but posits only a secondary direct effect by instructional staff rather than a main direct effect. The second objection noted for the Centra and Potter (1980) study is also applicable here. The difference in this case is that the Glasman and Biniaminov (1981) study acknowledges that these studies are not included in their review and that these social-psychological factors need to be considered.

A third review by Murnane (1981) takes a somewhat different approach. Although Murnane is an economist and looks at econometric production function studies, he concentrates on those which have attempted to isolate the factors which most explain differences in school quality. Consistent with the recommendations of Averch et al. (1972), these findings indicate that the interactions and expectations of staff and students are alterable and that these dynamic characteristics of the school do account for variance in achievement. This is also consistent with Bloom's (1980) suggestion that

future educational research should concentrate on alterable variables, e.g., time-on-task versus time available, teacher attitudes and behavior versus teacher demographic characteristics, etc.

Among other factors, Murnane (1981) identifies the following which correlate with higher achievement: teachers--intellectual ability, motivation, and overall "good" ratings by supervisors; student body composition--the higher the average SES or academic ability, the more positive the effect on individual students; inconclusive evidence on class size--although Glasman and Biniaminov (1981) present evidence for an interaction effect in which low ability classes suffer more negative effects from higher class size; promising results that time involved in learning, if measured more precisely, is an important factor. Murnane's (1981) findings also indicate some variables that are not related to outcomes: physical facilities and the areas of curriculum and instruction, due to problems of measurement and inconsistency across schools. But like Glasman and Biniaminov (1981), Murnane (1981) also notes that the social-psychological factors have not yet been sufficiently addressed in econometric quantitative studies.

These three reviews, representing the state of the art for input-output studies, illustrate some important conclusions about research on school effects. First, differences in the quality of schools, beyond variance in family background characteristics, can be and have been identified using large scale data bases. This conclusion, as opposed to the earlier "no school effects" result of the Coleman Report and the status-attainment work (e.g., Hauser, 1971), is due to more direct measurement of social-psychological factors within the school rather than the earlier emphasis on facilities and monetary input variables.

Second, the factors identified to this point by input-output studies do

not have the richness of detail or detailed specification of processes when compared to organizational/case studies or social-psychological studies of learning environments. Both of these areas will be reviewed separately below.

Third, to the extent that these input-output studies are now finding factors consistent with these other two types of studies, albeit not as richly described, the degree of generalization of results is strengthened, compared to the more limited generalizability of case studies or small data bases.

Fourth, other methodological issues, besides the emphasis on direct measurement of social-psychological processes, have contributed to findings in this area. Those issues are addressed in the next section.

Methodological Issues

Methodological problems and procedures often become apparent as scientists search for answers to anamolies or inconsistent findings. Sometimes the impetus also comes from scientific intuition--hunches, disquieting feelings, or leaps of faith. But almost always, methodological improvements come from a variety of researchers and the advantage of reanalyses or replication. The issues discussed in this section are no exception.

Parenthetically, the changes in the variables studied and in the basic conclusions in the 15 years of research on schools from the mid 60s to 1980 are consistent with Kuhn's (1970) work on advances in science, i.e., the major problems of a discipline gradually yield to normal science, improvements in instruments and methodology, and the combined effects of many studies, most by researchers who will never contribute major theoretical advances. In this case, one major impetus was an intuitive and somewhat experiential sense that the conclusion that schools make little difference was wrong. Well educated and finacially able parents, policy makers, and researchers have

characteristically ensured that their own children were enrolled in "good" schools, either private or public. In this context, see the revealing anecdote on network information about the "good" schools in Pettigrew (1975).

Measuring Achievement

How is achievement measured? Madaus, Kellaghan, Rakow, and King (1979) compared the amount of variance explained between schools for content-specific subjects such as algebra or chemistry versus standardized measures of verbal ability. The former are more sensitive to between-school differences and what is actually taught in schools. Madaus et al. (1979) contend that standardized verbal measures tap family influence, intelligence, and general experience to a much greater extent than content-specific achievement and are therefore less sensitive to school-based learning. The Coleman Report (1966) used a less sensitive standardized verbal measure of achievement for the analyses from which come the conclusion that schools do not make a difference.

Contextual Effects

How is the learning or social climate of the school conceptualized? Early research, especially the status-attainment literature and studies on the effects of aspirations on college or future job, generally used the aggregate level of SES, and percent white if available, as a proxy for the direct measurement of the value climate in a school. At issue is the existence of a contextual effect. Hauser (1971) contends that once the individual characteristics of the students are fully controlled, no effect over and beyond the differences in the aggregate of students between schools will exist. But McDill, Rigsby, and Meyers (1969) and Brookover et al. (1979) argue that composite SES and percent white are not an adequate measure of values and social-psychological factors: unless the value climate of a school

is measured directly, the researcher must assume that a given level of student body composition has one and only one possible value structure associated with it. That assumption not only seems preposterous, but has also been shown empirically to be invalid (see Brookover et al., 1979: McDill, Meyers, and Rigsby, 1967).

But the existence of a contextual effect is a complex methodological problem. Multicollinearity and longitudinal growth must be accounted for, yet are difficult to study. Longitudinal studies are expensive and, when available, often do not have data that contain direct measurement of social-psychological processes. For example, Jencks and Brown (1975) analyzed longitudinal data from Project Talent. They concluded that high schools accounted for only 1-4 percent of the variance in achievement between schools. But their data was for ninth through twelfth grade with later follow-up data. Variations from differences in schools prior to ninth grade would not be reflected in their data. Further, no direct measure of social-psychological factors was included. Yet despite this, the authors note that a difference of 2/1 exists in the quality of the top fifty schools in verbal achievement compared to the bottom fifty. The difference was 6/1 in mathematics, which reinforces the point made by Madaus et al. (1979) about content-specific, school-based instruction versus standardized verbal scores. This finding also reinforces Averch et al. (1972) regarding the need to study factors associated with the extremes rather than the mean.

Luecke and McGinn (1975) demonstrate that regression techniques for cross sectional data cannot be relied upon to accurately assess longitudinal realities. They generated simulated longitudinal data for a set of schools. Their cross sectional regression analysis both under and over-estimated the simulated longitudinal data set (primarily underestimated). Brookover et al.

(1982) note that the influences in a school on an individual student, class, or cohort cannot be attributed to only one teacher. Students have many teachers over the years; the faculty as a whole must take collective, longitudinal responsibility for outcomes. This view is also consistent with Finn's (1972) observation that the cumulative effects of the self-fullfilling prophecy are so pervasive that it is probably impossible to get an accurate appraisal of an individual's true ability apart from these continuing environmental forces, i.e., expectations and responses to those expectations which begin in infancy and continue through family, community, and school. Thus a variety of factors related to longitudinal measurement suggest that typical cross sectional analyses of schools are likely to underestimate the effects of schools.

Compounding the difficulties of longitudinal effects is the problem of multicollinearity: separating the effects on outcome measures of closely intertwined social factors. The individual's family background characteristics, usually measured by SES and race, the composition of the student body in terms of SES and percent white, and the direct measurement of the value/learning climate or other social-psychological processes (if available) are highly interconnected. Separating these effects completely is beyond methodological capability. At best, we can separate effects into the uniquely explained variance for each factor and a portion of the variance that is common to all of the factors.

The Coleman Report (1966) dealt with this problem by assigning the commonly explained variance to the first variable entered into the regression equation, arguing that family background influence occurs prior to school influence. Critics of this procedure (e.g., Hanushek & Kain, 1972) say that this results in a gross overestimate of the effects of the first entered

variable. Mayeske et al. (1972) used a technique of variance partitioning to separate effects. In general, they found that the commonly explained variance was greater than that which was uniquely explained. Alwin (1976) compared two procedures--contextual analysis, where the school effect is the net effect once variation due to individual variation and school composition are accounted for, versus analysis of covariance (ANCOVA) procedures where schools are used as treatment categories and the individual level variables are defined as co-variates. He concluded that within and between group variance is confounded in both methods, with no significant difference in the two models.

Alexander, Fennessey, McDill, and D'Amico (1979) suggest that three distinct approaches have been used to try to measure the composition effects on school outcomes--direct measurement of the values/expectations or normative climate, the network of peer interactions and interpersonal group influences which are directly related to the composite SES (and percent white, if available) of the student body, and the structural characteristics of the school as represented by the degree of tracking and percent of students in the various tracks. The authors conclude that the three methods, although conceptually distinct, are so highly interconnected that methodological separation of the variance due to the three sets of variables is not possible with current statistical methods. On the other hand, Alexander et al. (1979) note that the three measures, taken together, do account for between-school effects and, when held constant, appear to reduce the variance due to the family background of individual students to insignificance.

Unit of Analysis

Another methodological issue is the question of the proper unit of

analysis. The Coleman Report (1966) used the individual student but did not have data linking students to specific teachers. Hanushek (1971) used the individual student but as linked to a certain teacher. This study became a prototype for econometric production function research, to the extent that Murnane's (1981) review of factors which affect school quality relies predominantly on this type of study. Three influential works in this mode are Murnane's (1975) research on inner-city school effectiveness, the Summers and Wolfe (1977) Philadelphia Federal Reserve Bank Study, and Murnane and Phillips' (1981) study of effective inner-city teachers. On the other hand, some researchers suggest that the classroom, school, or district is the proper unit of study. In truth, there are relationships at each level that can improve our understanding of schools.

Policy-related decisions such as the distribution of resources between schools or the ratio of administrators to teachers have been shown to affect achievement outcomes at the district level (Bidwell & Kasorda, 1975). Furthermore, district-level contingencies or environmental forces can influence the impact of the individual school or teacher on student outcomes.

The problem is methodologically complex. A recent study by Hopkins (1982) presents further empirical evidence on the issue of the individual versus the group as the proper unit of analysis. Schlechty (1976) reminds us, however, that there can be inherent bias in the methodological and statistical procedures that are used for a given level of analysis. This bias may be latent, evident only by a study of the assumptions that underlie the procedures or by an analysis of the development of the statistics in their original historical context. Schlechty (1976) is particularly concerned about over-estimating the effects of individual differences by focusing on the individual rather than the structural context. Specific examples of this

sociologically unimaginative (Mills, 1959) psychological bias are given in Apple (1974), Besag (1981), and Feuerstein (1979).

Particularly related to the proper unit of analysis is the problem of identifying the resources that each child in a district or school actually receives rather than simply relying on the average resources available. School-to school as well as within-school differences in resources can be quite common due, for example, to tracking (Rosenbaum, 1976, 1980), time-on-task (Hyman & Cohen, 1979), level of discipline (Jones, 1979), as well as quality and quantity of instruction related to overall level of expectations and emphasis on academic achievement (Coleman, 1981a, 1981b; Coleman, Hoffer, & Kilgore, 1982).

School Effectiveness and Achievement Variance

One last methodological issue should be mentioned. Although various researchers (e.g., Centra & Potter, 1980; Jencks et al., 1972) have suggested turning away from research on between-school differences because the majority of the total variance in outcomes is within schools (even though this review indicates that their conclusion is premature), little or no research has been done on the question of school effectiveness as related to the amount of variance in achievement rather than mean level of achievement. A whole range of research questions need to be addressed. Are schools with a restricted (or wide) range of within variance more or less effective as measured by mean achievement? What happens to schools (if they exist) that have restricted range of achievement because of ceiling effects? or floor effects? These questions are only representative of an area of research that should be pursued vigorously.

Social-Psychological Learning Environments

Closely related to the input-output production function studies of large scale data bases are those which have directly measured the social-psychological processes, attitudes, and expectations in the school. Conceptually, the distinction is sometimes more a matter of emphasis rather than of statistical procedures since some of the latter studies use regression techniques similar to the input-output analyses. But despite the methodological similarities and the trend toward more direct measurement of these transactions and attitudes within the school by the more quantitatively oriented studies just reviewed, the contribution of the studies on learning environments is a separate and important development of the overall school effects literature.

In effect, the two types of studies are merging; the formerly quantitative analyses have increasingly gathered data on the social-psychological factors that the learning environment studies have shown to be related to school outcomes. The most obvious example of this statement can be seen by comparing two data bases that much of the status-attainment work used (basically a conclusion of no school effects) with a recent, large scale, longitudinal data set. Neither the Wisconsin data (e.g., Sewell et al., 1969) not the Nashville data (Hauser, 1971) contained extensive direct measurement of the learning climate in the school; conversely the current study by the National Center for Educational Statistics (NCES), which was used for the highly controversial comparison of public and private high schools (see the methodological and policy debates in Educational Researcher, 1981; Harvard Educational Review, 1981; Phi Delta Kappan, 1981; Sociology of Education, 1982), contains rich descriptive measurement of interactions, goals, expectations, and other social-psychological variables. Significantly, despite the furor over the

policy implications favoring private versus public high schools, the conclusion that what happens within a school affects student achievement with respect to between-school comparisons is no longer at issue for most researchers. Unfortunately policy makers and school officials too often lose sight of this evidence in the highly politicized arena of educational policy and budget allocation.

Given this methodolcgical qualification, four major conclusions can be gleaned from this literature: (1) Schools (and classrooms) do make a difference, (2) The primary factors which account for differences in school outcomes are social-psychological in nature, (3) The different studies have used different operational definitions, methodologies, and emphases, yet have remarkably similar conclusions, (4) The findings have been summarized as the effective schools characteristics (p. 5-7 above).

There is no natural way of classifying studies of learning environments. However, age of students (elementary versus secondary), unit of analysis (classroom versus school), and psychological emphasis (affective versus cognitive) provides a useful, if not mutually exclusive or theoretical, basis for discussion. Several of the more important studies are reviewed here.

Perhaps the earliest attempt to measure social-psychological climates directly was the classic study by Lewin, Lippitt, and White (1939) on the effects of different types of leadership style. Working with after-school clubs, the researchers experimentally varied "democratic," "authoritarian," and "laissez faire" leadership behavior to produce the respective social climates for the meetings. This study has been widely cited to show the superiority of the democratic social climate. In affective responses by the boys involved, this type of leadership was preferred and produced more positive independent behavior when the leader was out of the room. But this

study is apparently much cited and little read. Contrary to the common conclusion that this series of studies shows superiority for the democratic climate, the results indicate otherwise. Data reported on outcomes of the boys' activities are sparse; however, the authoritarian leadership was more effective based on actual production of the masks that were the objectives of the craft activities (Lippitt & White, 1952). Furthermore, since the clubs were voluntary, generalization to schools from this study appears suspect.

Consistent with a careful reading of this work, the current research on "direct instruction" is now demonstrating that teacher directed instruction with emphasis on achievement, productive use of time, and control of subject matter and pupil activities is most effective for high achievement, particurlarly in the core studies of reading, math, and required academic subjects (Borphy, 1979; Good, 1979). As an aside, it should be mentioned that direct instruction does not have to connote harsh, drill-sergeant behavior. Perhaps because the term "direct" is less affectively and ideologically loaded than "authoritarian," and because the empirical evidence is much greater, direct instruction is now becoming recognized and accepted as a means of producing higher achievement whereas the authoritarian climate has had a negative image.

Direct measurement of the learning environment in the school itself was not to occur for several years. Perhaps the first attempt at this in elementary classrooms was the study by Fox, Lippitt, and Schmuck (1964). They gathered data from sociometric techniques and questionnaires on teacher and student perceptions of power, social status, expectations, support from parents, and related factors. Fox et al. (1964) found that the social-psychological climate of the classroom varied widely and was strongly associated with students' self-concept, satisfaction with school, and

utilization of intelligence (degree to which students achieved relative to their aptitude). Teachers were an important factor in these varying classroom climates. As is the case for most of the work in this area, reference groups, sources of expectations and evaluations, and students' perceptions of these influences comprised the theoretical focus which guided the study.

Another milestone study by McDill and associates utilized faculty and student perceptions of the academic climate in 20 high schools. Six different measures--academic emulation, intellectual-aestheticism, cohesive and egalitarian aestheticism, scientism, humanistic excellence, and academically oriented status system--were statistically significant after individual level SES, ability, and values toward school were obtained. These school level measures of academic climate varied widely between schools; furthermore, when the climate was held constant, school differences in SES were no longer statistically significant for mathematics achievement (see McDill et al., 1967; McDill & Rigsby, 1973; McDill et al., 1969).

The intellectual heritage of the McDill and associates study traces back to the studies of intellectual climate on college campuses (Pace & Stern, 1958). That impetus in turn came from an effort to operationalize Murray's (1938) needs-press theory. Pace (1968) reviews this college-level research.

In addition to these early studies in the 1960s, four other influential works can be identified. Two of these studied the effects of classroom climates on learning outcomes. Walberg and his associates developed the Learning Environment Inventory (LEI). The LEI contained 15 sub-scales based on students' perceptions of the classroom learning environment in high school. Originally used for physics (Anderson, 1970), the LEI has been widely adapted. O'Reilly's (1975) study of mathematics achievement was similar to the earlier work in physics, indicating that the LEI scales accounted for

significant achievement differences even after individual level SES and ability were controlled.

Another set of classroom climate scales was developed by Moos and Trickett (1974). Titled the Classroom Environment Scale (CES), the nine subscales measure student perceptions of environmental press in four areas--dimensions of relationship, personal development, system maintenance, and system change. This work, also based on the needs-press theory of Murray (1938), is one of nine Social Climate Scales that were developed to apply to a variety of work and group environments (Insel & Moos, 1974; Moos, 1974). The CES has been correlated with both affective and cognitive outcomes. More complete overviews of these two influential trends can be found in Walberg (1976, 1979), Moos (1979), & Fraser's (1981, 1982) recent review monograph and report of continuing research, respectively.

A third major work was the Michigan study of 91 randomly selected elementary schools (Brookover et al., 1978, 1979). This research utilized 14 social-psychological climate variables--5 teacher, 5 student, and 4 principal--measuring teacher and principal expectations and evaluations of student ability, academic push, and student perceptions of these factors. This related cluster of scales probed both current and future expectations. But of all the factors, Student Sense of Academic Futility, a school-specific adaptation of the Coleman et al. (1966) student sense of control, explained about half of the variance in achievement in reading and math. Taken together, these climate variables explained slightly more of the achievement than the family background factors of SES and percent white. When these composition variables and structural measures of the school were added to the climate scales, 86 percent of the achievement variance between schools was explained in the statewide sample.

The Brookover et al. (1979) study, drawing on the research on self-concept (Brookover et al., 1963, 1965, 1967), the Coleman Report (1966), high school academic climates (McDill et al., 1967), and a previous exploratory study of atypical schools (Brookover & Schneider, 1975) was able to demonstrate that social-psychological factors affecting learning vary widely from school to school and that much of this variation is independent of SES and race. Perhaps even more important, the study demonstrates that the adult staff has the major influence on the local normative values, beliefs, attitudes, and expectations in a given school.

An analysis of the factors in this study that are associated with student achievement reveals a double link to teacher expectations and evaluations. First, teacher expectations are directly associated with achievement, i.e., the self-fulfilling prophecy. Second, the students' sense of futility was the most powerful single variable associated with achievement. But when student futility was used as a dependent variable (conceptualizing it as an intervening, individual-level internalization of the overall school social climate), the variable most highly associated with student futility was teacher expectations. In effect, teacher expectations and evaluations formed both a direct and an indirect (through student with futility) link to achievement. The study also indicated that the structure of the school was a significant factor. Specifically, the vertical differentiation of the instructional program in terms of grouping and tracking was negatively correlated with academic performance; the more differentiated the school, the lower was the overall achievement.

The research program headed by Brookover at Michigan State University has generated several additional studies. A complete listing is not possible here, but several of the more directly related can be mentioned. Various

studies have investigated patterns of expectations (Gigliotti, 1972), variables associated with high and low achieving schools matched for demographic background (Schneider, 1973), and sex and race differences in perceptions of students (Hathaway, 1977).

A fourth major study by Rutter, Maughan, Mortimore, Ouston, and Smith (1979) of 12 inner-city London high schools utilizes a somewhat different methodology. This is a longitudinal four-year analysis of four sets of variables: (1) intake--social background, behavior, and cognitive abilities; (2) process measures--behavioral and organizational observations of the learning environments within the schools: (3) outcomes of schooling; (4) ecological or societal factors. In general the study demonstrates that high schools produce differing results once individual characteristics of the incoming students are controlled. Rutter et al. (1979) suggest that faculty attitudes, behavior, and academic focus produce an overall "ethos" that is unique to each school. This composite ethos is associated with student outcomes; furthermore, the complexity of many factors of attitudes, behavior, teaching process, etc., none of which is highly associated with outcomes by itself, combines to produce an overall ethos that is strongly associated with outcomes. The ethos (and the ten conclusions of this study) appear to be very similar to the academic climate of McDill et al. (1967) and the school social climate of Brookover et al. (1979).

The works just cited by no means exhaust the literature on direct measurement of the learning environment. As is true of any attempt at classification, many of the actual studies do not fit neatly into any one category or "ideal type." Several examples can be cited. The Alexander et al. (1979) study can be seen as a bridge between studies from three different perspectives--status attainment, input-output analyses, and direct measurement of the learning environment.

Another variation on the direct measurement of the learning environment was the study of the Hartford, Connecticut, busing program. Mahan and Mahan (1971) were able to randomly assign inner city students to other urban and suburban schools. Using mean achievement scores and sociometric data from measures of the classroom social climate, the results demonstrated that the changes in mental ability scores for the individual students were dependent on the mean achievement level of the classroom they were placed in. Mahan and Mahan (1971) suggest that earlier studies and conclusions that schools cannot overcome the effects of low income or minority status were seriously flawed in two respects.

First, the data were correlational and inadequately measured the school's actual social-psychological climate with respect to the reference group characteristics of peers. This study provides experimental controls with longitudinal data; with those conditions controlled, changes in the school environment produced changes in mental ability.

Second, earlier studies were based upon a conception of remedying individual deficiencies in the child rather than attempting to change the social environment. This last point is precisely what critics of the "culture of poverty" thesis have claimed: rather than "blaming the victim" and then concentrating on the "defects" of the individual, we should be concerned with the structural and social conditions that produce those deficits in the first place. The studies just cited provide strong evidence that school environments are variable and that this variance is associated with student academic performance and even measured mental ability.

This factor of variability has been too little studied. Perhaps because the predominant mode of studying school climates has been to use a composite measure of SES and percent race as a proxy for the social climate, there has

been a tendency on the part of researchers to assume that a given social or learning environment is much like any other at that level. Glasheen, Hadley, and Schneider (1977) were able to use longitudinal data collected on ninth graders in four high schools in an eastern city to test this. Their study, similar in many respects to the McDill et al. (1967) and Brookover et al. (1979) studies, also indicates that the normative learning environment does affect achievement after family background characteristics have been controlled.

But this study also produced interactions between family background, ability, attendance, school social climate, measures of students' self-concept and fate control, and achievement that differ from one school to the next. In other words, a given level of attendance or self-concept did not explain equal amounts in the four schools. This suggests that the direct study of the social-psychological learning environment must not only be concerned with identifying relevant factors and their operational measurement at the composite level, but also with the particular way in which these factors interact in a given school. Similar aggregate levels can combine to give uneven results in different schools. The conclusion: learning environments are far more complex than previously proposed in various models of school attainment or achievement.

A further example of the complexity of school environments is the study of 19 Israeli junior highs by Chen and Fresko (1978). They conceptualize school climate by the type of mobility or selection system (tracking) in the building, hypothesizing that teacher and student attitudes, behavior, and evaluations of ability will be primarily determined by this structural feature. The authors controlled for SES, dichotomized race/ethnicity (white--European, American; non-white--Oriental, Asian, African), and measured

internal-external locus of control. Overall school achievement was associated with the three levels of school climate; non-tracking was scored high climate while rigid tracking was conceptualized as low climate. As predicted, low income students with external locus of control fared worse in the low climate schools (rigid tracking). But as in the Glasheen et al. (1977) study, interactions among the factors within the school system, including some U-shaped curvilinear relations, were found. Again, the findings suggest that factors in the social system are not independent; social-psychological variables produce complex learning environments and combine in ways that reflect situational differences between schools.

Two of the studies noted above present cross-cultural confirmation of school effects (Chen & Fresko, 1978; Rutter et al., 1979). Two other cross-cultural studies produce similar results. Madaus et al. (1979) sample 47 of 582 high schools in Ireland. They suggest that the Coleman Report (1966) and other similar studies which produced essentially a "no school effects" finding independent of family background can be explained by methodological distinctions (see the section above on Methodological Issues.) Madaus et al. (1979) found that mean levels of achievement between classrooms accounted for 40 percent of the total variance, a figure considerably higher than the 15-30 percent between school variance found in the Coleman Report (1966). In this study, family background accounted for very little. However, this finding could be due to Ireland's high rate of drop-outs, which produces a natural homogenization by social class. A study by Brimer, Madaus, Chapman, Kellaghan, and Wood (1978, cited in Madaus et al., 1979) in England produced similar results, further strengthening the conclusion that school effects are significant when the social-psychological learning environment is measured directly.

Two other issues can be noted. The first is the extent to which internal-external locus of control (Rotter, 1966) or some variant thereof, e.g., sense of control (Coleman et al., 1966) or student sense of academic futility (Brookover et al., 1979), is associated with achievement, self-concept of ability, the learning environment, and demographic background variables. This issue is deserving of further attention for three reasons.

First, the consistency with which this variable produces significant associations with achievement is remarkable, given the different studies and varying conceptualizations of the learning environment. Second, the strength of this association is consistently high and in some studies is the most potent single variable (Brookover et al., 1979) or the second strongest school-related variable (Coleman et al., 1966). Third, the concept, motivation, despite methodological and theoretical problems (see e.g., Bolles, 1978; Uguroglu & Walberg, 1979; Weiner, 1972, 1979) seems somehow linked to the various measures of locus of control. An analysis of this literature is impossible here, but the reader is referred to two recent reviews which relate this phenomena to the wider social-psychological arena (Miller & Crano, 1980; Stipek & Weisz, 1981).

The second related issue is how and to what extent the affective dimension of the school environment relates to student outcomes, particularly achievement. Many investigators in the realm of school climate appear to be more interested in non-cognitive outcomes (e.g., Fox, Boies, Brainard, Fletcher, Huge, Martin, Maynard, Monasmith, Olivero, Schmuck, Shaheen, & Stegeman, 1973; Willower, Eidell, & Hoy, 1967) or simply assume that improvement in the affective feelings in a school will automatically result in increased achievement. Fullan et al. (1980) reveal a similar affective perspective in the organizational development (OD) literature. At any rate,

empirical research in this area is limited. And the few studies which do exist suggest that the relationship of the affective realm to achievement is not straightforward.

The Organizational Climate Description Questionnaire (OCDQ) developed by Halpin and Croft (1963) is a case in point. Despite the large number of studies using this measure of adult job satisfaction and openness of communication, very few of the studies looked at how the OCDQ related to achievement (Green, 1976; Mullins, 1976, cited in Halpin & Hayes, 1977). Conran and Beauchamp (1976) found a negative correlation with achievement; they reacted with incredulity, suggesting more research. A negative relation between achievement and adult staff relations was also found by Brookover and Lezotte (1977). Schools with improving achievement had staffs with relatively high amounts of conflict and dissatisfaction. Declining schools had complacent, satisfied faculty. Finlayson (1973) used a modified version of the OCDQ and found that wide variability across schools existed, sufficient to account for differnces in achievement levels, but his research did not actually correlate his measures with achievement. Neither Rasmussen's (1974) study of California elementary schools nor Brookover et al. (1979) found a relation between achievement and adult interpersonal satisfaction.

Several possible explanations for these results can be given. One possibility is that the affective realm is not closely associated with cognitive outcomes (perhaps two separate dimensions). But intuitively this explanation leaves many educators uncomfortable; in addition two studies just cited produced negative correlations, and the human relations school of organizational thought, dating back to the Hawthorne studies (Roethlisberger & Dickson, 1947), is based on the theory that higher morale results in greater productivity. Furthermore, one theorist (Hage, 1965) even suggests that one

axiom of organizations is a negative correlation between satisfaction and productivity.

A second possibility is that a curvilinear relation exists. Both low and high adult oriented "climates" might be associated with lower achievement and an optimal, medium level with higher achievement. In this explanation, morale that is too low could be debilitating. Too high could result in goal displacement in which the means to higher achievement (better morale) becomes an end in itself, displacing the goal of student achievement. Whatever the explanation, more research on this topic is certainly needed.

The research just reviewed looks at social-psychological variables affecting school outcomes. The findings support and extend the results from the input-output analyses reviewed above. The studies to be reviewed next, organizational and case histories of districts or individual schools, provide further corroboration of the conclusion that schools can and do make a difference, but from yet another methodological approach.

Organizational and Case Histories

Studies of this type have both a distinct strength and weakness. Their strength lies in the richness of detail and the focus on process that can be attained from in-depth analysis of a small sample. The samll sample size is also the weakness. Generalization from case studies is limited at best. But in combination with other types of research such as survey studies using large data bases, organizational analysis is both useful and methodologically sound. This type of study is ideal for investigating exceptions or "outliers" to find why they depart from the typical pattern (and to find if these exceptions have similarities which can account for their exceptionality), for generating hypotheses to be tested in later studies using large and more

representative samples, for developing new operational variables that are associated with the exceptional nature of the cases selected, for providing counterexamples to commonly accepted beliefs, and for confirming in greater detail the findings of survey research. The studies to be reviewed here have performed one or more of these functions.

Somewhat arbitrarily, these studies are grouped in two categories--natural experiments on the effects of not going to school (or on drastically changed conditions in the environment) and studies of atypically successful schools.

The Effects of No Schooling

The extreme situation is the rare occurrence of a child raised in virtual isolation, the so-called feral child. Davis' (1940) report of such a case, and his review of other recorded instances, leads him to conclude that the extremely low level of social, mental, and emotional functioniong are due to the deprivation of early interaction with a primary group, rather than genetic deficiency. These cases indicate that deprivation of normal socialization can produce severely stunted functional performance. Recent research, however, would suggest that functional deficiencies are not irremediable, and that even deficits from subnormal early socialization experiences can be overcome; Feuerstein (1979, 1980) and Hobbs and Robinson (1982) discuss and review this perspective which challenges traditional assumptions on the immutability of ability, performance, and early socialization.

Related to the situation above is the effect of not going to school, or having the school and community change drastically over a relatively short period of time. Such situations present an alternative means of addressing the question, Do schools make a difference? In this sense, the comparision is going to school versus not going to school. This contrasts with the sense in

which the question is usually posed, going back to the Coleman Report (1966): Does going to school X versus school Y produce differential outcomes. The usual outcome investigated is student achievement, although other outcomes of schooling have been and frequently are used.

Perhaps the most notable example of no schooling occurred from 1959-1963. Prince Edward County in Virginia closed the public schools rather than comply with the Brown (1954) desegregation mandates. Private schools were set up for whites; blacks were without schools with the exception of those few who were able to stay with relatives or friends outside the county part or all of the four years. The effects on blacks in achievement and I.Q. compared to the blacks in an adjacent county were devastating. Achievement levels were down from 2.5-4.0 grade levels in the group who received no formal education and I.Q.'s were depressed from 15-30 points. This study by Green, Hofman, Morse, Hayes, and Morgan (1964) indicates that deprivation from schooling depresses not only school-specific achievement but also the supposedly more stable aptitude or intelligence measures.

Wheeler's (1942) comparative study of East Tennessee mountain families in 1930 and 1940 has similar implications. The same researchers, testing the same families, found an average increase of 10 points in I.Q. Wheeler hypothesizes that the opening of the region with new roads and better communication during the New Deal Depression projects changed the overall environment. This change was mediated through the schools by reducing the number of children who started school after age six and the number of children who were overage for grade. In this instance earlier and greater exposure to school was the factor which was associated with the higher I.Q./aptitude results. Wheeler (1942) also found related studies with similar results.

That not being exposed to school, or being exposed to drastically changed

school and environmental experiences, produces extensive differences in both achievement and I.Q. has been dramatically documented. Wiley and Harnischfeger (1974) link this conception of quantity of schooling to the more usual manner of posing the school effects issue: What is the difference between school X and school Y. Studies which reached the dismal conclusion that schools do not make a difference (e.g., Coleman et al., 1966; Jencks et al., 1972) had conceptualized attendance as a family background variable rather than a school context variable. But a quantity of schooling variable can be utilized in the "no schooling" studies just cited as well as in the various kinds of school effects research. By focusing on Carroll's (1963) model of school learning, the two major variables with respect to time can be summarized as follows (Wiley & Harnischfeger, 1974):

$$\text{degree of learning} = f\ \frac{\text{time actually spent}}{\text{time needed}}$$

The time-actually-spent variable bridges the gap between gross measures of amount of schooling and an individual student's actual academic engaged time (Anderson, 1981; Rosenshine, 1979; Rosenshine & Berliner, 1978). Thus differences in length of the school year, e.g., Hicks' (1970) report that achievement scores in New York City were depressed by two months due to the extended teachers' strike of 1968-69, the length of the day, allocation of time to various academic or nonacademic subjects, disruptions because of discipline problems, instructional efficiency, and attendance all become factors which contribute to the actual time spent on learning.

Using this connection (time-actually-spent), it is possible to classify studies of "no schooling" as a subclass of the school effects literature. The time variable is measured at a macro level instead of the individual/micro level as in most studies of time-on-task.

Atypically Successful Schools

Research in this area has been principally of two kinds. First, case studies of particular schools describe the interactions within the social system which are then associated with the school's achievement level. Generally, the school so studied has first been identified as unusally high achieving, given the student composition of low SES and percent white. Occasionally, however, case studies present stark descriptions of racist (Rosenfeld, 1976) or social class (Rist, 1970) discrimination. Both of these ethnographies provide rich detail on the ways in which teachers and schools communicate negative self-fulfilling prophecies through put-downs, labeling, grouping that is based on social class characteristics, and differential access to quality and quantity of instruction.

The prototype of atypical case studies is Weber's (1971) Inner City Children Can be Taught to Read: Four Successful Schools. The existence of exemplary low-income and/or minority schools is now widely known and accepted in the research community and is spreading throughout the ranks of practitioners, although there remains a significant segment of educators and the public who believe that poor and minority children cannot learn well. But Weber's (1971) research was conducted at a time when it was almost universally believed that schools could do nothing to overcome the effects of disadvantaged status. In the strictest sense of the term, Weber presented a counter-example study. The four schools selected were clearly inner city, very low income, high percent black, and yet had third grade mean reading scores at or above national norms (50th Percentile). Furthermore, Weber tested the children himself on a test he developed and normed to ensure that the children had not been "coached" or "taught the test."

The Weber (1971) study found eight characteristics common to the four

schools: (1) strong instructional leadership, (2) high expectations, (3) positive atmosphere, (4) strong emphasis on reading, (5) additional reading personnel, (6) use of phonics, (7) individualization, and (8) careful evaluation of pupil progress. In addition, Weber found six factors which were not common to all four schools, thus indicating that these factors may be questioned as to their necessity for high achievement: (1) small class size, (2) achievement grouping, (3) superior quality of teaching, (4) ethnic background of teacher similar to that of the students, (5) preschool education, and (6) optimal physical facilities.

While not all of the characteristics which Weber identified have stood the test of further studies, many of these findings have. Even more important is the tradition of research in this vein that has continued at an ever increasing rate. Not all of the studies can be reviewed in detail here, but together they present a consistent profile of characteristics that are common to atypically successful schools. A more comprehensive review is given in Purkey and Smith (in press).

For example, Sowell (1974) analyzed Dunbar High School in Washington, D.C., a black institution with a superior reputation. Sowell's (1976) study of other distinguished black high schools found that they shared with Dunbar rigorous standards of excellence, high expectations, academic focus, tight discipline, and exceptional instructional leaders. Fuerst's (1981) description of black schools doing better than expected in Chicago had similar results.

Kozberg and Winegar (1981) describe their reform efforts at South Boston High School in terms of strategies highly consistent with Sowell's (1974, 1976) studies. Specifically they recommend: (1) increasing time-on-task, (2) emphasizing the social context of learning, (3) eliminating tracking, (4)

teaching appropriate school behavior and values, (5) high expectations, (6) common objectives and curriculum for ninth graders with emphasis on basic literacy, self-discipline, and the relationship between work and life, and (7) a learning environment which is highly structured and shaped by adults, but reflecting input and dialogue by students.

Hoover's (1978) study of black schools at grade level is notable for a different approach. Based on extensive interviews and observations, Hoover produces a comprehensive list of reasons--blaming the victim and blaming the system--which school personnel typically give to explain why poor and minority children can't learn. Hoover (1978) then suggests that successful staffs reject this scapegoating explanation and instead commit themselves to getting the job done. Common characteristics of successful schools include direct and structured instruction in standard English, group-oriented and cooperative approach to learning (e.g., Johnson & Johnson, 1975), positive and firm discipline, high expectations and emphasis on student motivation, strong program of staff training, strong administrative leadership, and a focus on academic excellence.

Highly consistent with these characteristics are the 10 factors associated with the differences between six improving schools and two declining schools in the Changing Schools study (Brookover & Lezotte, 1977). These eight schools, with achievement changing significantly over a three-year period, were identified from the Michigan Educational Assessment Program (MEAP) criterion-referenced test given to all 4th and 7th grade students in the state in math and reading. Differences between the improvers and decliners were as follows: (1) the extent of acceptance and focus on basic skill achievement, (2) the level of teachers' evaluation of students' abilities to learn and master instructional objectives, (3) the extent of expectations for students

to do well in and complete high school and college, (4) extent to which teachers and principals accept and assume responsibility for students' achievement, (5) amount of instructional time devoted to basic skills (associated with teachers' efficacy, the extent to which staff believe they can influence learning), (6) principal as instructional leader and strong disciplinarian in improvers versus more permissive, collegial-oriented, public relations approach with less emphasis on instructional objectives in decliners, (7) extent of acceptance of an accountability model for student achievement and of belief in the validity of MEAP as an indicator of success, (8) improvers with lower teacher morale and satisfaction with the current situation versus decliners with greater complacency and satisfaction with level of achievement and working conditions, (9) parent involvement not clear cut, but less total involvement and greater parent-initiated contact in improving schools, (10) compensatory education program in which decliners have greater number of regular staff involved in identifying target students, with associated tendency toward diffusion of responsibility for students' achievements. Taken together, the Brookover and Lezotte (1977) findings indicate that teachers' beliefs and behaviors are strongly associated with student achievement over time.

One other study should be mentioned here. The Phi Delta Kappan (1980) study of exceptional schools contains eight case histories as well as a review of the literature and the results of interviews with several leading researchers in the field of effective schools. Findings of significance include the importance of goal focus on academic excellence and basic skills achievement, effective discipline, and instructional leadership, among others. But this study also highlights, by way of omission, the necessity of defining the criteria for effectiveness. Several of the case histories are

self-selected "effective" schools, illustrating that there are degrees of effectiveness and that some of these schools apparently define effectiveness in criteria other than achievement.

Certainly achievement is not the only criteria for evaluating schools. But as Brookover, Ferderbar, Gay, Middleton, Posner, and Roebuck (1980) demonstrate, mastering the basic literacy skills of mathematics and language arts is a necessary first goal for any other academic objectives which may be deemed important. Furthermore, social-emotional criteria such as self-concept, good citizenship, preparation for work, or fate control can only be facilitated by the mastery of basic literacy skills by all students. Schools which claim effectiveness without evidence of mastery of basic achievement skills by the vast majority of all students should be viewed with caution. Simply put, mastery of basic literacy skills is a necessary threshold for success in all areas in modern society.

In addition to the case histories just reviewed, there is a second type of study that is common in the area of exemplary schools research. This second type is often designated by the term, "outlier studies." In actuality, the methods of collecting data are similar to the research noted above, utilizing methods such as interviewing, observations, document analysis, surveys, etc. These studies are grouped separately here because of their approach to identifying the sites to be investigated. Most schools lie fairly close to the SES-percent white/achievement regression line. However, a few schools at both ends of the spectrum, i.e., high achieving, low income/minority schools and low achieving, high income/white schools, are, by definition, exceptions to the typical regression line that has been documented so extensively in the Coleman Report (1966) and most other research on achievement and family background demographic factors. The computer program identifies those schools

which are the most distant from the regression line, and these become the sample for the study.

Much of the impetus for this type of research can be traced to evaluation research on compensatory education programs from the Elementary and Secondary Education Act of 1965. A brief review by Austin (1979) documents the generally dismal state of these programs, such as Title I, in the late 1960s. Most of the major studies of compensatory education concluded that the programs were not successful. So common was this finding that Jensen (1969, p. 2) begins his famous Harvard Education Review article on the genetic deficit of blacks and the heritability of I.Q. with the statement, "Compensatory education has been tried and it apparently has failed." This viewpoint was completely consistent with the results of the Coleman Report (1966) and other social science research on schools.

Not all of this research, however, was negative. Hawkridge, Chalupsky, and Roberts (1968), discovering that not all compensatory education in California was equally effective, described exemplary programs and their characteristics. At the same time, this study and another by Hawkridge, Campeau, and Trickett (1969) were to set a trend in the identification of exemplary schools. Wargo et al. (1971) and Kiesling (1971) continued this line of research.

The idea that some programs were better than others was extended to schools by Klitgaard and Hall (1973). Their statistical search for effective schools was based on an entirely different policy and social science perspective than the large scale input-output analyses. Granting that most schools were close reflections of their demographic makeup, Klitgaard and Hall (1973) asked if there might not be exceptions or outliers which did produce success for disadvantaged schools. They suggested that research and policy

should be concentrated not on the many schools which apparently had no impact beyond family background factors, but on those few schools which demonstrated that factors in the schools could make a difference.

The number of studies using some variant of the statistical approach of Klitgaard and Hall (1973) has increased rapidly. Edmonds (1979) notes several works which identify high achieving, disadvantaged schools that are indistinguishable from the demographics of other disadvantaged schools, with one exception: the comparison schools are low achieving, as is typically expected. The data utilized for these studies--Detroit Model Cities and reanalysis of a portion of the Coleman Report (1966)--do not allow in-depth study of the school factors that could explain this divergence. But this technique does illustrate that even large scale data bases can be used to demonstrate that some schools are instructionally effective for poor and/or minority children.

This point cannot be emphasized enough. Consistent with recommendations by Averch et al. (1972) and Klitgaard and Hall (1973), these studies probe the data base for outliers and extremes; typical input-output analyses investigate relationships of central tendencies. And in a system in which the vast majority of schools do reflect the social class makeup of the students, the outliers approach has been successful in identifying variables associated with the exemplary schools.

Lezotte and Passalacqua (1978) use a similar approach. Their analysis utilizes previous achievement at the individual level as a control for SES. After thus controlling for SES, the study found that the school attended explains another 16% of the variance. Lezotte and Passalacqua conclude that this is a true "school effect" and note that this result is comparable to other studies with respect to the size of a school effect.

This same approach to studying outliers has also become a common means for state departments of education and large city systems to identify successful schools. Edmonds (1979) reviews the State of the New York (1974) pairing of two comparable inner city New York schools: one effective and one ineffective in teaching reading. Madden, Lawson, and Sweet (1976), cited in Edmonds, 1979) utilized 21 pairs of elementary schools matched for family background but differing substantially in achievement. Some of the other states (or cities) conducting this type of analysis include Rhode Island (Bassis, Brittingham, Ewing, Horwitz, Hunter, Long, Maguire, Morton, & Pezzullo, 1976), Maryland (Maryland State Department of Education, 1978), Michigan (Brookover & Lezotte, 1977; Brookover & Schneider, 1975), Philadelphia (Cooley, 1978; Kean, 1979), and Delaware (Venezky & Winfield, 1980).

Space does not allow separate analysis of each of these studies, but it is safe to say that the results of these studies are generally consistent with those already cited in the section above on case histories. In some of the studies (e.g., Bassis et al., 1976; Maryland State Department of Education, 1978) SES and percent white are related slightly to the outcomes. But the conclusion in these studies and the other research is that factors within the school are predominantly responsible for the differences in achievement. It is also important to note that not every factor found in these analyses occurs in each study. But the factors noted here do occur with sufficient regularity to give credence to their inclusion among the characteristics of atypically successful low-income/minority schools.

On the basis of his own research and his extensive review of studies in this area, Edmonds (1979) has suggested five correlates of effective schools for the poor. These correlates, probably the most commonly cited summary of effective schools research are as follows: (1) strong administrative

leadership especially in the instructional area, (2) high expectations for all students, (3) an orderly, work-oriented, positive atmosphere or climate, (4) priority focus on pupil acquisition of instructional objectives over all other goals, and (5) frequent monitoring of pupil progress.

A comment on the increasing prevalence of research in this area is also in order. Numerous reviews of these outliers or case studies have appeared recently in addition to this historical overview. The Edmonds (1978, 1979) Austin (1979) and Purkey and Smith (in press) reviews have already been mentioned. In addition Moody (1982) provides a comprehensive bibliography and Shoemaker and Fraser (1981) describe practices associated with effective principals. In a closely related field, Anderson (1982) surveys the field of school climate, which in recent years has become more closely affiliated with the effective schools literature. Lezotte et al. (1980) link the school climate literature specifically to the effective schools work. These reviews suggest that the explosion of research in this field is continuing. A recent issue of Educational Leadership (1982) was entirely devoted to effective schools. Furthermore, school improvement programs are becoming commonplace as legislatures, communities, and educators all become more aware of and interested in the existence of better schools for all children. Space precludes a complete listing of these programs, but Edmonds (1982b) describes several of these.

Instructional Practices

One last aspect of the broader conception of school effects must be noted. Much of the research cited here has been primarily concerned with the attitudes, expectations, and beliefs that are prevalent in a school. The case studies just reviewed also emphasized structural characteristics of the school

such as tracking or reward structures. But eventually learning depends on the actual delivery of instruction by the teaching staff. While this review is not primarily concerned with research on teaching, which is an individual level focus, a teacher's individual instructional behavior is closely associated with the structure of the school and the ideological norms and attitudes which prevail. These interacting forces will be listed briefly. A thorough discussion is not possible here, but some basic references are listed.

One major influence on instruction is the belief which teachers hold regarding human potential to learn. Teachers who believe that the ability to learn well is distributed along a normal curve will behave differently than those who believe that virtually all children can learn effectively. Bloom's (1976) empirical and theoretical work on mastery learning is particularly germane here. Some form of mastery learning, either explicit or implicit through a focused emphasis on mastery of instructional objectives (Brookover et al., 1979; Brookover & Lezotte, 1977), is frequently a characteristic of effective schools for the disadvantaged.

McLaughlin and Marsh (1978) review the Rand study, which ranks as the most comprehensive empirical analysis of educational change yet conducted. The findings are clearly consistent with the factors noted throughout this paper. Of special interest is the variable with the most powerful association with achievement in the entire study: teacher efficacy, the degree to which teachers perceive themselves able to make a difference in the learning of students. This variable is closely related to teachers' expectations and evaluations of students' ability to learn, probably the most commonly cited factor in the effective schools literature. The teacher efficacy variable also taps the fate control dimension in a manner which parallels the various student measures of locus of control reviewed above.

Other aspects of effective teaching which relate to the context of the school include the work on direct instruction (Brophy, 1979; Good, 1979), time-on-task (Anderson, 1981; Hyman & Cohen, 1979; Rosenshine, 1979), level of school and classroom discipline (Brophy & Putnam, 1978; Jones, 1979; Kounin, 1970), reward structures (Brookover et al., 1982; Pincus, 1974; Slavin, 1977), proper use of praise and encouragement (Brophy, 1981), and academic team games (Slavin & DeVries, 1979).

One final topic can be noted, although grouping practices are perhaps better viewed as a structural feature of the school rather than an instructional variable. But instruction often occurs within the context of grouping, largely associated with basal reading groups in elementary school and in curriculum tracks at the secondary level. Grouping practices are also highly associated with beliefs about children's abilities to learn. Perhaps in no other facet of the school are the ideological, structural, and instructional components so closely interconnected as in grouping.

Some of the research in this area is inconsistent. However, the predominant finding is that grouping by homogeneous ability either has no significant effect on mean school achievement or results in lower mean school achievement compared to heterogeneous grouping. Rosenbaum (1976, 1980) reviews the negative effects of labeling, teacher expectation, and the stratification function of the schools in the wider society. In their summary of the characteristics of effective schools, Brookover et al. (1982) conclude that both stratification of pupils and differentiation of levels of instruction are minimal in most exemplary schools.

Summing Up

This section has traced the origin and development of research on school

effects. Of particular concern was the manner in which various strands of school effects research have become incorporated into or consistent with the current conception of effective schools. Coincident with the incorporation of the school effects research was the transition from the emphasis on the normative aspects of the school in much of the earlier research, e.g., beliefs, expectations, and attitudes, to the current broader conception of effective schools which includes structural features and instructional practices as well as the ideological component.

But the movement described above cannot be understood apart from the historical period in which this trend occurred. Early research on schooling in general and on school effects studies in particular was focused on such outcomes as student aspirations or on understanding social mobility/status-attainment processes as mediated by the schools. A further end of this review therefore was to trace the gradual shift toward a focus on student achievement as the major school outcome. Although other factors are noted, the role of the Coleman Report (1966) as commissioned by the Civil Rights Act of 1964 is seen as pivotal in this shift. The development of the various types of school effects research can be seen largely as a reaction to the findings of the Coleman Report (1966).

Finally, it should be explicitly stated that the effective schools research is a subset of the school effects literature, which is generally more concerned with macro level analyses of the impact of schooling on social class and occupational mobility. The effective schools studies on the other hand tend to focus on the mirco level transactions and structures within the schools which account for differences between schools. The distinction is not clear cut, however. The focus and methodology of the two levels are merging as the school effects literature increasingly utilizes the findings of the effective schools research and the effective schools movement strives to

extend the generalizability of its results by utilizing larger and more representative samples.

The Educability Issue

Seemingly inevitably, the issues in this review return to conceptions about the distribution of children's ability to learn as related to school performance. In this concluding section, some difficult questions will be raised, most of which have as much or more to do with politics as with educational research.

Can All Students Learn?

No matter how much we study the factors which affect learning, for most Americans--including researchers, educators, policy makers, and the public--the ultimate question with respect to student achievement is, How much individual ability does the pupil have? Is the child "slow"? Perhaps he or she is learning disabled (LD)? The standard solution is analogous to the medical model: a series of diagnostic tests to determine why the child cannot learn. The difficulty is presumed to be with the pupil. This model is based on the psychology of individual differences, the underlying assumption of the American Dream.

A contrasting but relatively unknown view is the social-psychological explanation of the J-curve of conforming behavior (Allport, 1934; Bloom, 1976, 1978; Brookover & Erickson, 1975). According to this model, virtually all students are capable of learning whatever societal expectations demand of them. Increasing evidence exists that the ability of virtually all students to learn at grade level equivalents is among the factors that can be distributed in a J-curve. Data from Bloom's (1976) work on mastery learning, Heber's (1972) classic early intervention program and Tavris' (1976) review of

related studies, other countries that have little problem with "slow" learners (Feinberg, 1975; Stein, Note 2), the literature on effective schools, and Feuerstein's (1979) work on the modifiability of cognitive structure and the potential to learn would suggest that virtually all children in America have sufficient mental capacity to achieve at grade level.

Why then is the belief in individual differences so predominant? And school failure so common? Numerous scholars have suggested that this ideological belief is rooted in the hierarchical occupational and social class structure of our capitalistic system. Of particular interest is Marks' (1980) historical study of the shaping influence on American schooling by E.L. Thorndike's work on the I.Q. test in the early twentieth century. The overwhelming acceptance of scientific measurement of individual differences by the public legitimates the vast differentials in status, wealth, and power (see also Blum, 1978; Gould, 1981; Karier, 1973).

Everyone "knows" that some people do poorly in school and are not capable of better jobs, and that of course most of those who do poorly in school are the poor and minorities. Thus the sorting and selecting of students into the occupational hierarchy by the schools seems "right and natural," even though the system reproduces the social class system from generation to generation with relatively little movement. Marks (1980) puts the matter bluntly when he states that individual differences are socially constructed (Berger & Luckmann, 1967) by the practices in our schools which are designed to foster and increase differences in learning.

The obvious question now becomes, How does this effect research on educational change and effective schools? The answer is that many of the educational innovations and most of the traditional research have been based upon the assumptions of individual differences. Quite simply, it has been

assumed that the low achievement prevalent in many schools and in certain children is a function of either limited native ability or culturally disadvantaged family upbringing; schools may have some minor impact, but there will always remain a certain (fairly large) percentage of children who simply cannot learn well. That bias has already been described in the analysis of the assumptions that underlie our educational, psychological, and sociological models.

Some obvious examples with respect to educational practice and innovation include the 1960's emphasis on ability grouping and tracking and the revised curricula of science and math in the post-Sputnik era. Of course, the emphasis on I.Q., the use of standardized norm-referenced tests, competitive grading, individualized instruction, and the use of reading groups associated with basal readers are prevalent in our society.

Project LONGSTEP (1976; Chalupsky & Coles, 1977) stands as the epitome of this trend. In a three-year study of 30,000 students, 80 schools, and 1,500 teachers in 13 districts, a series of educational innovations commonly associated with individualized instruction were implemented. Major findings included: (1) overall, LONGSTEP students did not do better than national norms, (2) in third grade, individualization was negatively related to achievement, and (3) overachievers in the study were consistently those who had a lower level implementaion and degree of individualization. Although these findings are consistent with the research on effective schools, the belief that individualization is a beneficial innovation remains both prevalent and virtually unchallenged. Typical of this trend, the Experimental Schools program (Herriott & Gross, 1979), a major federally funded research and assistance effort, was based on comprehensive change that revolved around individualizing and personalizing instruction, consistent with assumptions on

meeting the needs of individuals with extreme differences in ability.

On the other hand, a careful reading of the characteristics of effective schools (p. 5-7 above) reveals a different underlying assumption: that almost all children are capable of learning well and that it is the school's responsibility to see that all children perform to a common level of mastery. This view does not restrict children from higher levels of performance, but the stress is not on the economic efficiency model of maximizing individual differences as most traditional school practices do; rather, the staffs of effective schools have implicitly adopted a set of beliefs, structures, and instructional practices that foster and promote an ethic of effectiveness through maximum human resource development of all students. In essense this equity-based value rests on mastery of instructional objectives in the core academic subjects by all students as a necessary stepping stone to higher levels of individual actualization of potential and of human capital development necessary for the economic growth of our country.

It cannot be emphasized enough that we are dealing with two fundamentally opposed political values: (1) economic efficiency which maximizes individual differences, based on the assumption that human ability is widely variant and that scarce resources should be concentrated on developing the potential of "the best and the brightest," (2) equity-based effectiveness which develops the full potential of all students, based on the assumption that virtually all humans can learn well and that economic resources should be focused on increasing the productivity of the entire society. Seldom do empirical or policy studies make explicit the underlying values inherent in the theoretical models used or the recommendations made. But as Karabel and Halsey (1976) note, one function of an intellectual history is to explicate just those values that link the values of the wider society to the bias in our research.

Accordingly, we need to be aware that the effective schools movement promotes the equity-based model and counters traditional (and still powerful) forces in both society and the schools that magnify and select for individual differences consistent with our hierarchical economic and social class system.

Implications and Recommendations

Several issues have been suggested by this review. These are summarized here, followed by a cautionary note.

1. More research is clearly needed and all of these areas should be pursued vigorously:

   The effects of differing patterns of within school variance, such as bi- or multi-modal distributions of norms or achievement are poorly understood (see section on methodology). Various types of disaggregation of data are also revealing, e.g., by race, SES, quartiles, stanines (1-3, 4-6, 7-9), etc.

   Casual ordering of variables is another issue. Characteristics of effective schools have shown consistent correlations, but longitudinal, quasi-experimental studies are needed to determine causality and explicate complex interrelationships among variables.

   Another fundamental question is why exemplary schools differ from typical buildings. Edmonds (1979) suggests that dynamic, committed principals and teachers are a part of the answer. But that raises the further question, Why are these educators so committed when most schools accept that poor children cannot do well. Further research on reward structures, both explicit and implicit, may provide clues to this puzzle. Analysis of the presense of the "equity" versus "efficiency" value among staff may also prove propitious.

   Assuming that we wish to apply the results of effective schools research to effect improvement in low achieving schools presents a major problem. Social scientific knowledge of educational and organizational change is less advanced than current knowledge on the dynamics of naturally occurring exemplary buildings. Overviews and discussion of some of the major problems can be found in Fullan et al. (1980), Goodlad (1975), Herriott and Gross (1979), Lezotte et al. 1980), McLaughlin and Marsh (1978), Morrish (1976), and Sarason (1971).

   Finally, methodological issues and better quality research in general face this field, as is true of all social science. The Purkey and Smith (in press) review is explicitly methodological in its approach and their recommendations on this topic should be observed.

2. Norm-referenced versus criterion-referenced testing. As with most complex topics, this is not a simple either-or situation. But clearly the traditional emphasis in America has been biased toward norm-referenced, standardized testing. While there is currently a criterion-referenced movement afoot, more thought needs to be directed to the implications of testing and school improvement. Specifically, what happens to the mean on standardized norm-referenced tests if large numbers of students begin to perform better. Since the mean simply moves to the right, the curve still produces winners, average pupils, and losers, even though by the old standard, there would be virtually no losers. A solution is to produce criterion- referenced tests that are equivalent in difficulty to some point on current norm-referenced rests, say the 50th percentile. Progress can then be measured by the percent of students who master the objectives for this new criterion-referenced test. We have a National Assessment of Educational Progress. Perhaps it is time for an equivalent national criterion-referenced test. Several states have already done this and there is an apparent movement in this direction.

3. A related issue must be faced. Manpower needs are currently insufficient to provide full employment. Under those circumstances, those who are least well educated are most likely to suffer the effects of un- or underemployment. Improving the quality of education dramatically will do little to change manpower needs; it will however produce many well-educated workers for whom no jobs may be available. In other words, producing effective schools on a wide scale could very possibly be a crippling blow to the role of schooling as the major legitimator of the inequalities in our social class system. And although many have touted the probability of increased need for highly skilled and educated workers because of the computer/information revolution, the concept of "user friendly" computers of the future suggest an increasingly stratified society of unskilled workers and a few highly skills engineers, scientists, and programmers (Levin & Rumberger, 1983).

4. The criteria for evaluating effective schools. There is no current consensus on what criteria should be used. Clearly there are degrees of effectiveness. Edmonds (1982a) suggests that effective schools are those in which there is an equal percentage of students from high and low SES who master basic instructional objectives. He adds that upper income parents will exert sufficient pressure to ensure that the school will remain high achieving. While achievement of this goal would bring dramatic improvement in our schools, there is the very strong possibility that students would still be sorted into some hierarchical ordering, despite the elimination of group biases and a much raised floor level of performance. Rosenbaum's (1976) case study of tracking in a very homogeneous, all white suburb demonstrates the propensity of our schools to foster extreme individual differences, consistent with the occupational and social class structure of the economic system, even in the absense of group distinctions.

   Another possibility for an evaluative criteria is that virtually all students (say 85 percent or better) must demonstrate mastery of basic

academic objectives. However, even this approach would not negate the selection process. Admission to elite colleges, professional schools, etc. would still be based on competitive norm-referenced aptitude tests. Even if virtually all students scored higher than current standards, those who "topped the (new) curve" would still be selected.

5. On individual differences: the intent of this review is not to suggest that individual differences do not exist. However, two points can be made.

   a. Individual differences have been vastly overestimated in their effects for schooling and social class--at the expense of understanding the pervasive and latent effects of structural features in both society and the schools that are "socially constructing" and increasing individual differences. These structural aspects of society, and concomitant belief systems regarding individual differences, are deeply embedded in the social and economic fabric of the American class system (cf. Persell, 1977).

   b. Individual differences that do exist are at a level above what is required for grade level mastery of instructional objectives in the basic academic subjects. Virtually all students are capable of achieving at this level.

Given the controversial and political nature of these issues, any recommendation will undoubtedly stir controversy. Very simply, one recommendation based on the educational merits of this review suggests implementing programs to foster the characteristics of effective schools. That in itself is a momentous task, given what we know about organizational and individual resistance to change, the extent to which the schools are tied into the wider economic system, and the limitations on the effective schools research as noted in #1 above.

But that educational recommendation, difficult as it is, immediately runs counter to political and economic realities. Many in this country favor an educational system based on the value of economic efficiency, and continue to believe strongly in the psychology of individual differences. A quote from Tomlinson's (1982) review of Brookover et al. (1982) clearly illustrates this:

> That belief [that schools should produce students, virtually all of whom master instructional objectives] also evades a well established

> characteristic of human learning--as talent emerges and responds to training and instruction, effective schooling should expand the differences between students rather than restrict them (p. 72).

That conclusion is empirically questionable, based on the research reviewed here. It is also philosophically untenable to this author. But it does highlight an issue which is, at bottom, political and economic. In the final analysis, political and economic decisions, not educational research and knowhow, will determine the extent to which we move toward more effective schools. We would do well to remember that.

REFERENCE NOTES

1. Miller, S. K. Thinking about school climate: Past and present. Paper presented at National Association of Secondary School Principals Annual Meeting, Dallas, Februay, 1983.

2. Stein, A. Talk about Chinese educational system, to New York City Teachers, New York University, October, 1975.

REFERENCES

Alexander, K. L., Fennessey, J., McDill, E. L., & D'Amico, R. J. School SES influences--Composition or context? Sociology of Education, 1979, 52(4), 222-237.

Allport, F. J-Curve hypothesis of comforming behavior. Journal of Social Psychology, 1934, 5, 141-181.

Alwin, D. F. Assessing school effects: Some identities. Sociology of Education, 1976, 49, 294-303.

Anderson, C. S. The search for school climate: A review of the research. Review of Educational Research, 1982, 52(3), 368-420.

Anderson, G. J. Effects of classroom social climate on individual learning. American Educational Research Journal, 1970, 7(2), 135-152.

Anderson, L. W. Instruction and time-on-task: A review. Journal of Curriculum Studies, 1981, 13(4), 289-303.

Apple, M. W. The process and ideology of valuing in educational settings. In M. W. Apple, M. J. Subkoviak, & H. S. Lufler (Eds.), Educational evaluation: Analysis and responsibility. Berkeley: McCutchan Publishing Corporation, 1974.

Aronowitz, S. The trap of environmentalism. In A. Gartner, C. Greer, & F. Riessman (Eds.), The new assault on equality: IQ and social stratification. New York: Perennial Library, 1974.

Austin, G. R. Exemplary schools and the search for effectiveness. Educational Leadership, 1979, 37(1), 10-14.

Averch, H. A., Caroll, S. J., Donaldson, T. S., Kiesling, H. J., & Pincus, J. How effective is schooling? A critical review and synthesis of research findings. Santa Monica, Cal.: The Rand Corporation, 1972.

Bain, R. K., & Anderson, J. G. School context and peer influences on educational plans of adolescents. Review of Educational Research, 1974, 44, 429-445.

Baratz, S. S., & Baratz, J. C. Early childhood intervention: The social science base of instructional racism. Harvard Educational Review, 1970, 40, 29-50.

Bassis, M., Brittingham, B. E., Ewing, P., Horwitz, S., Hunter, W., Long, J., Maguire, J., Morton, D., & Pezullo, T. Achievement in the basic skills: 4th/8th grade, public and parochial schools (Executive Summary). Kingston, R.I.: Curriculum Research and Development Center, University of Rhode Island, October 1976.

Becker, H. S. Social-class variations in the teacher-pupil relationship. Journal of Educational Sociology, 1952, 25, 451-465.

Berg, I., with Gorelick, S. Education and jobs: The great training robbery. Boston: Beacon Press, 1971.

Berger, P. L., & Luckmann, T. The social construction of reality: A treatise in the sociology of knowledge. New York: Doubleday Anchor Books, 1967.

Besag, F. P. Social Darwinism, race, and research. Educational Evaluation and Policy Analysis, 1981, 3 (1), 55-69.

Bidwell, C. E., & Kasorda, J. D. School district organization and student achievement. American Sociological Review, 1975, 40, 55-70.

Blau, P., & Duncan, D. D. The American occupational structure. New York: Wiley, 1967.

Bloom, B. S. Human characteristics and school learning. New York: McGraw-Hill, 1976.

Bloom, B. S. New views of the learner: Implications for instruction and curriculum. Educational Leadership, 1978, 35(7), 563-576.

Bloom, B. S. The new direction in educational research: Alterable variables. Phi Delta Kappan, 1980, 61(6), 382-385.

Blum, J. M. Pseudoscience and mental ability: The origins and fallacies of the IQ controversy. New York: Monthly Review Press, 1978.

Bolles, R. C. Whatever happened to motivation? Educational Psychologist, 1978, 13, 1-13.

Bowles, S., & Gintis, H. Schooling in capitalist America. New York: Basic Books, Paperback, 1977.

Brim, O. J. Sociology and the field of education. New York: Russell Sage Foundation, 1958.

Brimer, A., Madaus, G. F., Chapman, B., Kellaghan, T., & Wood, R. Sources of differences in school achievement. Slough, England: NFER Publishing Co., 1978.

Brookover, W. B. Sociology of education. In H. Mitzel (Ed.), Encyclopedia of educational research (5th Ed.). New York: The Free Press, 1982.

Brookover, W., Beady, C., Flood, P., Schweitzer, J., & Wisenbaker, J. School social systems and student achievement: Schools can make a difference. New York: Praeger, J. F. Bergin, 1979.

Brookover, W. B., Beamer, L., Efthim, H., Hathaway, D., Lezotte, L., Miller, S., Passalacqua, J., & Tornatzky, L. Creating effective schools: An inservice program for enhancing school learning climate and achievement. Holmes Beach, Fla.: Learning Publications, Inc., 1982.

Brookover, W. B., & Erickson, E. L. Sociology of education. Homewood, Ill.: The Dorsey Press, 1975.

Brookover, W. B., Erickson, E. L., & Joiner, L. M. Self-concept of ability and school achievement, III. East Lansing, Mich.: Human Learning Research Institute, Michigan State University, 1967.

Brookover, W. B., Ferderbar, G., Gay, G., Middleton, M., Posner, G., & Roebuck, F. Measuring and attaining the goals of education. Alexandria, Vir.: Association for Supervision and Curriculum Development, 1980.

Brookover, W. B., LePere, J., Hamacheck, D., Thomas, S., & Erickson, E. Self-concept of ability and school achievement, II. East Lansing, Mich.: Human Learning Research Institute, Michigan State University, 1965.

Brookover, W. B., & Lezotte, L. W. Changes in school characteristics coincident with changes in student achievement (Executive Summary). East Lansing, Mich.: College of Urban Development, Michigan State University, 1977.

Brookover, W. B., Paterson, A., & Thomas, S. Self-concept of ability and school achievement. East Lansing: College of Education, Michigan State University, 1962.

Brookover, W. B., & Schneider, J. Academic environments and elementary school achievement. Journal of Research and Development in Education, 1975, 9, 83-91.

Brookover, W. B., Schweitzer, J. H., Schneider, J. M., Beady, C. H., Flood, P. K., & Wisenbaker, J. M. Elementary school social climate and school achievement. American Educational Research Journal.

Brophy, J. E. Advances in teacher research. The Journal of Classroom Interaction, 1979, 15(1), 1-7.

Brophy, J. Teacher praise: A functional analysis. Review of Educational Research, 1981, 51(1), 5-32.

Brophy, J. E., & Good, T. L. Teacher-student relationships: Causes and consequences. New York: Holt, Rinehart, and Winston, 1974.

Brophy, J. E., & Putnam, J. G. Classroom management in the elementary grades. East Lansing: Institute for Research on Teaching, Research Series No. 32, Michigan State University, 1978.

Broudy, H. S. The real world of the public schools. New York: Harcourt Brace Javonovich, 1972.

Brown v. Board of Education of Topeka, 1954. 347 U.S., 483.

Bruner, J. S. The process of education. New York: Vintage Books, 1960.

Callahan, R. Education and the cult of efficiency. Chicago: University of Chicago Press, 1962.

Campbell, C. A dublious distinction? An inquiry into the value and use of Merton's concepts of manifest and latent function. American Sociological Review, 1982, 47(1), 29-44.

Carroll, J. B. A model of school learning. Teachers College Record, 1963, 64, 723-733.

Centra, J. A., & Potter, D. A. School and teacher effects: An inter-relational model. Review of Educational Research, 1980, 50(2), 273-291.

Chalupsky, A. B., & Coles, G. J. The unfulfilled promise of educational innovation. Paper presented at American Educational Research Association, New York, 1977.

Chen, M., & Fresko, B. The interaction of school environment and student traits. Educational Research, 1978, 20, 114-121.

Clark, K. E. Dark ghetto. New York: Harper and Row, 1965.

Coleman, J. Private schools, public schools, and the public interest. The Public Interest, 1981a, 64, 19-30.

Coleman, J. S. Quality and equality in American education: Public and Catholic schools. Phi Delta Kappan, 1981b, 63(3), 159-164.

Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, F., & York, R. Equality of educational opportunity, Washington, D.C.: U.S. Government Printing Office, 1966.

Coleman, J., Hoffer, T., & Kolgore, S. High school achievement: Public Catholic, and other private schools compared. New York: Basic Books, 1982.

Conant, J. B. The American high school today. New York: McGraw-Hill, 1959.

Conran, P. C., & Beauchamp, G. A. Relationships among leadership, climate, teacher, and student variables in curriculum engineering. Paper presented at the Annual Meeting of the Research Association, San Francisco, April, 1976. (ERIC Document Reproduction Service No. ED 119 330)

Cooley, C. H. Human nature and the social order. New York: Charles Scribner's Sons, 1902.

Cooley, W. W. Explanatory observational studies. University of Pittsburgh, Learning Research and Development Center, 1978.

Cooper, H., & Good, T. Pygmalion grows up: Studies in the expectation communication process. New York: Longman, 1982.

Coopersmith, S. Antecedents of self esteem. San Francisco: W. H. Freeman, 1967.

Corwin, R. G. Education and the sociology of complex organizations. In D. A. Hansen & J. E. Gerstle (Eds.), On Education--Sociological Perspectives. New York: John Wiley & Sons, Inc., 1967.

Crano, W. D., & Mellon, P. M. Causal influence of teachers' expectations on children's academic performance: A cross-lagged panel analysis. Journal of Educational Psychology, 1978, 70(1), 39-49.

Davis, K. Extreme social isolation of a child. American Journal of Sociology, 1940, 45, 554-565.

Dreeben, R. On what is learned in school. Reading, Mass.: Addison-Wesley, 1968.

Dreeben, R. The school as a workplace. In R. M. W. Travers (Ed.), Second handbook of research on teaching. Chicago: Rand McNally College Publishing, 1973.

Duncan, O. D., Featherman, D. L., & Duncan, B. Socioeconomic background and achievement. New York: Seminar Press, 1972.

Edmonds, R. A discussion of the literature and issues related to effective schooling. Paper prepared for the National Conference on Urban Education, St. Louis, July, 1978. (ERIC Document Reproduction Service # ED 170 394)

Edmonds, R. Effective schools for the urban poor. Educational Leadership, 1979, 37(1, Nov.), 15-24.

Edmonds, R. On school improvement: A conversation with Ronald Edmonds (Interviewed by R. Brandt). Educational Leadership, 1982a, 40(3, Dec.), 12-15.

Edmonds, R. Programs of school improvement: A 1982 overview. Unpublished manuscript, Michigan State University, prepared for the conference, The Implications of Research for Practice, Airlie House, Va., February, 1982b.

Educational Leadership, 1982, 40(3), entire issue.

Educational Researcher, 1981, 10(7), special issue, 7-23.

Feinberg, W. Educational equality under two conflicting models of educational development. Theory and Society, 1975, 2, 183-210.

Feuerstein, R. The dynamic assessment of retarded performers: The learning potential assessment device, theory, instruments, and techniques. Baltimore: University Park Press, 1979.

Feuerstein, R. Instrumental enrichments: An intervention program for cognitive modifiability. Baltimore: University Park Press, 1980.

Finlayson, D. S. Measuring 'school climate.' Trends in Education, 1973, No. 30, 19-27.

Finn, J. D. Expectations and the educational environment. Review of Educational Research, 1972, 42(3), 387-410.

Floud, J., & Halsey, A. H. The sociology of education: A trend report and bibliography. Current Sociology, 1958, 7, 165-235.

Fox, R. S., Boies, H. E., Brainard, E., Fletcher, E., Huge, J. S., Martin. C. L., Maynard, W., Monasmith, J., Olivero, J., Schmuck, R., Shaheen, T. A., & Stegeman, W. H. School climate improvement: A challenge to the school administrator. Bloomington, Ind.: Phi Delta Kappa, CFK Ltd., 1973.

Fox, R. S., Lippett, R. D., & Schmuck, R. A. Pupil-teacher adjustment and mutual adaptation in creating classroom learning environments (Final Report). U.S. Department of Health, Education, and Welfare, Office of Education, Cooperative Research Project No. 1167, Inter-Center Program of Research on Children, Youth, and Family Life, Institute for Social Research, University of Michigan, January, 1964.

Fraser, B. J. Learning environment in curriculum evaluation: A review. Evaluation in Education: International Progress, 1981, 5, 1-93. (Monograph)

Fraser, B. J. Differences between student and teacher perceptions of actual and preferred classroom learning environment. Educational Evaluation and Policy Analysis, 1982, 4(4), 511-519.

Fuerst, J. S. Report card: Chicago's all-black schools. The Public Interest, 1981, 64, 79-91.

Fullan, M., Miles, M. B., & Taylor, G. Organizational development in schools: The state of the art. Review of Educational Research, 1980, 50(1), 121-183.

Gage, N. L. The scientific basis of the art of teaching. New York: Teachers College Press, Columbia University, 1978.

Gallup, G. H. The 14th annual Gallup poll of the public's attitudes toward the public schools. Phi Delta Kappan, 1982, 64(1), 37-50.

Gartner, A., Greer, C., & Riessman, F. (Eds.). The new assault on equality: IQ and social stratification. New York: Perrennial Library, Harper & Row, 1974.

Gigliotti, R. C. The expectation pattern: An analysis of elementary school social environments. Unpublished doctoral dissertation, Michigan State University, 1972.

Glasheen, J. S., Hadley, D. W., & Schneider, J. M. Student adaptation to high school social groupings and normative environments. Paper presented to American Educational Research Association, April, 1977. (ERIC Document Reproduction Service No. ED 143 929)

Glasman, N. S., & Biniaminov, I. Input-output analyses of schools. Review of Educational Research, 1981, 51(4), 509-539.

Good, T. L. Teacher effectiveness in the elementary school. Journal of Teacher Education, 1979, 30(2), 52-64.

Goodlad, J. I. The dynamics of educational change: Toward responsive schools. New York: McGraw-Hill Book Company, 1975.

Gordon, J. C. B. Verbal deficit: A critique. London: Croon Helm, 1981.

Gould, S. J. The mismeasure of man. New York: Norton, 1981.

Green, C. H. The Organizational Climate Description Questionnaire: A review and synthesis of research conducted in elementary schools 1963-1972. Unpublished doctoral dissertation, University of Georgia, 1976.

Green, R. L., Hofman, L. J., Morse, R. J., Hayes, M. E., & Morgan, R. F. The educational status of children in a district without public schools. East Lansing, Mich.: Bureau of Educational Research, Michigan State University, Cooperative Research Project No. 2321, 1964.

Hage, J. An axiomatic theory of organizations. Administrative Science Quarterly, 1965, 10(3), 289-320.

Halberstam, D. The best and the brightest. New York: Fawcett Crest, 1969.

Haller, A., & Portes, A. Status attainment processes. Sociology of Education, 1973, 46, 51-91.

Halpin, A. W., & Croft, D. B. The organizational climate of schools. Chicago: Midwest Administration Centre, The University of Chicago, 1963.

Halpin, A. W., & Hayes, A. E. The broken ikon, or, whatever happened to theory? In L. L. Cunningham, W. G. Hack, & R. O. Nystrand, (Eds.), Educational administration: The developing decades. Berkeley, Cal.: McCutchan Publishing Corp., 1977.

Halsey, A. H., Floud, J., & Anderson, C. A. (Eds.). Education, economy, and society. New York: The Free Press, 1961.

Hanushek, E. A. Teacher characteristics and gains in student achievement: Estimation using micro data. The American Economic Review, 1971, 61, 280-288.

Hanushek, E. A, & Kain, J. F. On the value of Equality of Educational Opportunity as a guide to public policy. In F. Mosteller & D. P. Moynihan (Eds.), On equality of educational opportunity. New York: Vintage Books, 1972.

Harlem Youth Opportunities Unlimited. Youth in the ghetto. New York: Harlem Youth Opportunities Unlimited, Inc., 1964.

Harrington, M. The other America: Poverty in the United States. Baltimore: Penguin Books, 1963.

Harvard Educational Review, 1968, 38(1), special issue, 3-175.

Harvard Educational Review, 1981, 51(4), special issue, 481-545.

Hathaway, D. V. Sex and race differences in the perception of school climate by fourth and fifth grade students in Michigan public elementary schools. Unpublished M. A. thesis, Michigan State University, 1977.

Hauser, R. M. Socioeconomic background and educational performance. Washington, D.C.: Arnold M. Rose Monograph Series, American Sociological Association, 1971.

Hauser, R. M., Sewell, W. H., & Alwin, D. F. High school effects on achievement. In W. H. Sewell, R. M. Hauser, & D. L. Featherman (Eds.), Schooling and achievement in American society. New York: Academic Press, 1976.

Hawkridge, D. G., Campeau, P., & Trickett, P. A guide for authors of evaluation reports of educational programs. Palo Alto, Cal.: American Institutes for Research in the Behavioral Sciences, 1969.

Hawkridge, D. G., Chalupsky, A. B., & Roberts, A. O. A study of selected exemplary programs for the education of disadvantaged children, Parts I and II. Palo Alto, Cal.: American Institutes for Research, 1968. (ERIC Document Reproduction Service No. Ed. 023 777)

Heber, R. An experiment in the prevention of cultural-familial mental retardation. In Environment, intelligence, and scholastic achievement: A compilation of testimony to the Senate Committee on Equal Educational Opportunity. Washington, D.C.: U.S. Government Printing Office, 1972, 478-493.

Herriott, R. E., & Gross, N. (Eds.). The dynamics of planned educational change: Case studies and analyses. Berkeley, Cal.: McCutchan Publishing Corporation, 1979.

Hicks, N. Pupil reading ability drops here. The New York Times, 1970, 119 (Sunday, February 15), Section 1, p. 64.

Hobbs, N., & Robinson, S. Adolescent development and public policy. American Psychologist, 1982, 37(2), 212-223.

Hollingshead, A. B. Elmtown's youth. New York: Wiley, 1949.

Hoover, M. R. Characteristics of black schools at grade level: A description. The Reading Teacher, 1978, 31, 757-762.

Hopkins, K. D. The unit of analysis: Group means versus individual observations. American Educational Research Journal, 1982, 19(1), 5-18.

Howard, J. R. The cutting edge: Social movements and social change in America. Philadelphia: J. B. Lippincott Co., 1974.

Hyman, J. S., & Cohen, S. A. Learning for mastery: Ten conclusions after 15 years and 3,000 schools. Educational Leadership, 1979, 37(2), 104-109.

Insel, O. M., & Moos, R. H. Psychological environments: Expanding the scope of human ecology. American Psychologist, 1974, 29, 179-188.

James, T., & Tyack, D. Learning from past efforts to reform the high school. Phi Delta Kappan, 1983, 64(6), 400-406.

Jencks, C. S., & Brown, M. D. Effects of high schools on their students. Harvard Educational Review, 1975, 45(3), 273-324.

Jencks, C., Smith, M., Acland, H., Bane, M., Cohen, D., Gintis, H., Heyns, B., & Michelson, S. Inequality: A reassessment of the effect of family and schooling in America. New York: Basic Books, 1972.

Jensen, A. R. How much can we boost IQ and scholastic achievement? Harvard Educational Review, 1969, 39, 1-123.

Johnson, D. W., & Johnson, R. T. Learning together and alone, cooperation, competition, and individualization. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975.

Jones, F. H. The gentle art of classroom discipline. The National Elementary Principal, 1979, 58, 26-32.

Karabel, J., & Halsey, A. H. Educational research: A review and an interpretation. In J. Karabel & A. H. Halsey (Eds.), Power and ideology in education. New York: Oxford University Press, 1977.

Karier, C. J. Testing for order and control in the corporate liberal state. In C. J. Karier, P. Violas, & J. Spring (Eds.), Roots of crisis: American education in the twentieth century. Chicago: Rand McNally & Company, 1973.

Katz, M. B. The irony of early school reform: Educational innovation in mid-nineteenth century Massachusetts. Cambridge Mass.: Harvard University Press, 1968.

Katz, M. B. Class, bureaucracy and schools. New York, Praeger, 1971.

Kean, M. H., et al. What works in reading? Office of Research and Evaluation, Philadelphia School District, May, 1979.

Kiesling, H. J. A study of successful compensatory education projects in California. Santa Monica: The Rand Corp., 1971.

Klitgaard, R. E. & Hall, G. R. A statistical search for unusually effective schools. Santa Monica, California: Rand corporation, 1973.

Kounin, J. Discipline and group management in classrooms. New York: Holt, Rinehart, and Winston, 1970.

Kozberg, G., & Winegar, J. The South Boston story: Implications for secondary schools. Phi Delta Kappa, 1981, 62(8), 565-569.

Kuhn, T. S. The structure of scientific revolutions (Second Edition, Enlarged). Chicago: The University of Chicago Press, 1970.

Leacock, E. B. (Ed.). The culture of poverty: A Critique. New York: Simon and Shuster, 1971.

Levin, H. M., & Rumberger, R. W. Questionning high technology's employment outlook...Nationwide: More low skill jobs than high; maybe a loss in total numbers. The Louisville Courier-Journal, 1983, (Friday, February 4), A 9.

Lewin, K., Lippitt, R., & White, R. K. Patterns of aggressive behavior in experimentally created "social climates." The Journal of Social Psychology, 1939, 10, 271-299.

Lewis, O. The culture of poverty. Scientific American, 1966, 215, 19-25.

Lezotte, L. W., Hathaway, D. V., Miller, S. K., Passalacqua, J., & Brookover, W. B. School learning climate and student achievement: A social systems approach to increased student learning. Tallahassee, Fla.: National Teacher Corps, Florida State University Foundation, 1980.

Lezotte, L. W., & Passalacqua, J. Individual school buildings: Accounting for differences in measured pupil performance. Urban Education, 1978, 13, 283-293.

Lippitt, R., & White, R. K. An experimental study of leadership and group life. In G. E. Swanson, T. M. Newcomb, & E. L. Hartley (Eds.), Readings in Social Psychology (Revised Ed.). New York: Henry Holt & Company, 1952.

Luecke, D. F., & McGinn, N. F. Regression analyses and education production functions: Can they be trusted? Harvard Educational Review, 1975, 45 (3), 325-350.

Madaus, G. F., Kellaghan, T., Rakow, E. A., & King, D. J. The sensitivity of measures of school effectiveness. Harvard Educational Review, 1979, 49 (2), 207-230.

Madden, J. V., Lawson, D. R., & Sweet, D. School effectiveness study: State of California. California Department of Education, 1976.

Mahan, T. W., & Mahan, A. M. The impact of schools on learning: Inner-city children in suburban schools. Journal of School Psychology, 1971, 9, 1-11.

Marks, R. Legitimating industrial capitalism: Philanthropy and individual differences. In R. F. Arnove (Ed.), Philanthropy and cultural imperialism: The foundations at home and abroad. Boston: G. K. Hall & Co., 1980.

Maryland State Department of Education & Center for Educational Research and Development, University of Maryland. Process evaluation: A comprehensive study of outliers. February, 1978. (ERIC Document Reproduction Service No. Ed 160 644)

Mayeske, G. W., Wisler, C. E., Beaton, A. E., Jr., Weinfeld, F. O., Cohen, W. M., Okada, T., Proshek, J. M., & Tabler, K. A. A study of our nation's schools. Washington, D. C.: U.S. Department of Health, Education, and Welfare, Office of Education, 1972.

McDill, E. L., Meyers, E. D., Jr., & Rigsby, L. C. Institutional effects on the academic behavior of high school students. Sociology of Education, 1967, 40, 181-189.

McDill, E. L., Rigsby, L. C. Structure and process in secondary schools: The impact of educational climates. Baltimore: The Johns Hopkins University Press, 1973.

McDill, E. L., Rigsby, L. C., & Meyers, E. D., Jr. Educational climates of high schools: Their effects and sources. American Journal of Sociology, 1969, 74, 567-586.

McLaughlin, M. W., & Marsh, D. D. Staff development and school change. Teachers College Record, 1978, 80(1), 69-94.

Mead, G. H. Mind, self, and society, from the standpoint of a social behaviorist, C. W. Morris (Ed.). Chicago: University of Chicago Press, 1934.

Merton, R. K. Social theory and social structure (Rev. and Enl. Ed.) Glencoe, Ill.: The Free Press, 1957.

Miller, S. K., & Crano, W. D. Raising low-income/minority achievement by reducing student sense of academic futility: The underlying theoretical commonalities of suggested strategies. Paper Presented to American Educational Research Association, Boston, 1980. (ERIC Document Reproduction Service No. ED 186 575)

Mills, C. W. The sociological imagination. New York: Oxford University Press, 1959.

Moody, C. D., Sr. Effective schools research. Break through, Program for Educational Opportunity Newsletter, University of Michigan School of Education, 1982, 10(2, Winter), 2-15.

Moos, R. H. The social climate scales: An overview. Palo Alto, Cal.: Consulting Psychologists Press, 1974.

Moos, R. H. Evaluating educational environments. San Francisco: Josey-Bass, 1979.

Moos, R. H., & Trickett, E. J. Classroom environment scale manual. Palo Alto, Cal.: Consulting Psychologists Press, 1974.

Morrish, I. Aspects of educational change. London: George Allen & Unwin, 1976.

Mosteller, F., & Moynihan, D. P. (Eds.). On equality of educational opportunity. New York: Vintage, 1972.

Moynihan, D. P. The Negro family: The case for national action. Washington, D. C.: U.S. Government Printing Office, 1965.

Mullins, J. W. Analysis and synthesis of research utilizing the organizational climate description questionnaire: Organizations other than elementary schools. Unpublished doctoral dissertation, University of Georgia, 1976.

Murnane, R. J. The impact of school resources on the learning of inner city children. Cambridge, Mass.: Ballinger, 1975.

Murnane, R. J. Interpreting the evidence on school effectiveness, Teachers College Record, 1981, 83(1), 19-35.

Murnane, R. J., & Phillips, B. R. What do effective teachers of inner-city children have in common? Social Science Research, 1981, 10, 83-100.

Murray, H. Explorations in personality. New York: Oxford University Press, 1938.

O'Reilly, R. Classroom climate and achievement in secondary school mathematics classes. The Alberta Journal of Educational Research, 1975, 21, 241-248.

Pace, C. R. The measurement of college environments. In R. Tagiuri & G. H. Litwin (Eds.), Organizational climate: Explorations of a concept. Boston: Graduate School of Business Administration, Harvard University, 1968.

Pace, C. R., & Stern, G. S. An approach to the measurement of psychological characteristics of college environments. Journal of Educational Psychology, 1958, 49, 269-277.

Parsons, T. The school class as a social system: Some of it functions in American society. Harvard Educational Review, 1959, 29, 297-318.

Passow, A. H. (Ed.). Education in depressed areas. New York: Teachers College Press, Columbia University, 1963.

Perrow, C. Complex organizations: A critical essay (Second Edition). Glenview, Ill.: Scott, Foresman and Company, 1979.

Persell, C. H. Education and inequality: The roots and results of stratification in America's schools. New York: The Free Press, 1977.

Pettigrew, T. The cold structural inducements to integration. The Urban Review, 1975, 8(2), 137-144.

Phi Delta Kappa. Why do some urban schools succeed? The Phi Delta Kappa study of exceptional urban elementary schools. Bloomington, Ind.: Phi Delta Kappa, 1980.

Phi Delta Kappan, 1981, 63(3), special section, 159-168.

Pincus, J. Incentives for innovation in the public schools. Review of Educational Research, 1974, 44, 113-144.

Project LONGSTEP. Impact of educational innovation on student performance. Palo Alto, Cal.: American Institutes for Research, 1976.

Purkey, S.C., & Smith, M. S. Effective schools--A review. Elementary School Journal, in press.

Purkey, W. F. Self concept and school achievement. Englewood cliffs, N. J.: Prentice-Hall, 1971.

Rasmussen, R. L. The adult social system of the elementary school and sixth-grade achievement of basic skills. Unpublished doctoral dissertation, University of California, Los Angeles, 1974.

Riessman, F. The culturally deprived child. New York: Harper & Row, 1962.

Rist, R. C. Student social class and teacher expectations: The self-fulfilling prophecy in ghetto education. Harvard Educational Review, 1970, 40, 411-451.

Roethlisberger, F., & Dickson, W. Management and the worker. Cambridge, Mass.: Harvard University Press, 1947.

Rose, A. M. A systematic summary of symbolic interaction theory. In A. M. Rose (Ed.), Human behavior and social processes. Boston: Houghton-Mifflin, 1962.

Rosenbaum, J. E. Making inequality: The hidden curriculum of high school tracking. New York: John Wiley & Sons, 1976.

Rosenbaum, J. E. Social implications of educational grouping. In D. C. Berliner (Ed.), Review of Research in Education (Vol. 8). Washington, D. C.: American Educational Research Association, 1980.

Rosenberg, M. Society and the adolescent self-image. Princeton, N. J.: Princeton University Press, 1965.

Rosenfeld, G. Shut those thick lips: Can't you behave like a human being? In J. I. Roberts & S. K. Akinsany (Eds.), Schooling in the cultural context: Anthropological studies of education. New York: David McKay Company, 1976.

Rosenshine, B. Content, time, and direct instruction. In P. L. Peterson & H. J. Walberg (Eds.), Research on teaching: Concepts, findings, and implications. Berkeley, Cal.: McCutchan Publishing Corp., 1979.

Rosenshine, B., & Berliner, D. Academic engaged time. British Journal of Teacher Education, 1978, 4, 3-16.

Rosenthal, R. Self-fulfilling prophecies in behavioral research and everyday life. Claremont Reading Conference Yearbook, 1968, 32, 15-33.

Rosenthal, R., & Jacobson, L. Pygmalion in the classroom. New York: Holt, Rinehart, and Winston, 1968.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80(1, whole No. 609).

Rutter, M., Maughan, B., Mortimore, P., Ouston, J., with Smith, A. Fifteen thousand hours: Secondary schools and their effects on children. Cambridge, Mass.: Harvard University Press, 1979.

Ryan, W. Blaming the victim (Revised, Updated Ed.). New York: Vintage Books, 1976.

Sarason, S. B. The culture of the school and the problem of change. Boston: Allyn and Bacon, 1971.

Schlechty, P. C. Teaching and social behavior: Toward an organizational theory of instruction. Boston: Allyn and Bacon, 1976.

Schneider, J. M. An investigation of social psychological variables comprising school normative academic climate in high- and low-achieving white-urban, black-urban, and rural elementary schools with mean socio-economic status controlled. Unpublished doctoral dissertation, Michigan State University, 1973.

Sewell, W. H., Haller, A. O., & Portes, A. The educational and early occupational attainment process. American Sociological Review, 1969, 34, 82-92.

Sexton, P. C. Education and income. New York: Viking, 1961.

Shoemaker, J., & Fraser, H. W. What principals can do: Some implications from studies of effective schooling. Phi Delta Kappan, 1981, 63(3), 178-182.

Slavin, R. E. Classroom reward structure: An analytical and practical review. Review of Educational Research, 1977, 47, 633-650.

Slavin, R. E. Cooperative learning. Review of Educational Research, 1980, 50 (2), 315-342.

Slavin, R. E., & DeVries, D. L. Learning in teams. In H. Walberg (Ed.), Educational environments and effects and productivity. Berkeley, Cal.: McCutchan Publishing Corp., 1979.

Smith, M. S. Equality of educational opportunity: The basic findings reconsidered. In F. Mosteller & D. P. Moynihan (Eds.), On equality of educational opportunity. New York: Vintage Books, 1972.

Sociology of Education, 1983, 56(1), entire issue.

Sowell, T. Black excellence: The case of Dunbar High School. The Public Interest, 1974, (35, Spring), 1-21.

Sowell, T. Patterns of black excellence. The Public Interest, 1976, (43, Spring), 26-58.

Spring, J. The sorting machine: National educational policy since 1945. New York: David McKay Company, Inc., 1976.

State of New York. School factors influencing reading achievement: A case study of two inner city schools. Office of Education Performance Review, March, 1974.

Stein, A. Strategies of failure. Harvard Educational Review, 1971, 41, 158-204.

Stipek, D. J., & Weisz, J. R. Perceived personal control and academic achievement. Review of Educational Research, 1981, 51(1), 101-137.

Summers, A. A., & Wolfe, B. L. Do schools make a difference. The American Economic Review, 1977, 67, 639-652.

Tavris, C. Compensatory education: The glass is half full. Psychology Today, 1976, 10(4, September), 63-70; 73-74.

Thurow, L. C. The zero sum society: Distribution and the possibilities for economic change. New York, Penguin Books, 1981.

Tomlinson, T. W. Review of Creating Effective Schools by Brookover et al. Educational Leadership, 1982, 40(3, Dec.), 72-73.

Tyack, D. The one best system. Cambridge: Harvard University Press, 1974.

Uguroglu, M. E., & Walberg, H. J. Motivation and achievement: A quantitative synthesis. American Educational Research Journal, 1979, 16(4), 375-389.

Valentine, C. A. Culture and poverty. Chicago: University of Chicago Press, 1968.

Valentine, C. A. The "culture of poverty": Its scientific significance and its implications for action. In E. Leacock (Ed.), The culture of poverty: A critique. New York: Simon and Schuster, 1971.

Venezky, R. L., & Winfield, L. Schools that succeed beyond expectations in teaching reading. Newark, Del.: University of Delaware Studies on Education, Technical Report #1, 1980.

Walberg, H. J. Psychology of learning environments: Behavioral, structural, or perceptual? In L. S. Shulman (Ed.), Review of Research in Education (Vol. 4). Itasca, Ill.: F. E. Peacock, American Educational Research Association, 1976.

Walberg, H. J. (Ed.). Educational environments and effects: Evaluation, policy, and productivity. Berkeley, Cal.: McCutchan Publishing Corp., 1979.

Wargo, M. J., et al. Further examination of exemplary programs for educating disadvantaged children. Palo Alto, Cal.: American Institutes for Research in the Behavioral Sciences, 1971.

Warner, W. L., Havighurst, R. J., & Loeb, M. B. Who shall be educated? New York: Harper, 1944.

Weber, G. Inner city children can be taught to read: Four successful schools (Occasional Paper #18). Washington, D. C.: Council for Basic Education, 1971.

Webster, M., Jr., & Sobieszek, B. Sources of self-evaluation: A formal theory of significant others and social influence. New York: John Wiley & Sons, 1974.

Weiner, B. Theories of motivation: From mechanism to cognition. Chicago: Markham Publishing Company, 1972.

Weiner, B. A theory of motivation for some classroom experiences. Journal of Educational Psychology, 1979, 71(1), 3-25.

Weinstein, J. The corporate ideal in the liberal state 1900-1918. Boston: Beacon Paperback, 1969.

Wheeler, L. R. A comparative study of the intelligence of east Tennessee mountain children. Journal of Educational Psychology, 1942, 33(5), 321-334.

Wiley, D. E., & Harnischfeger, A. Explosion of a myth: Quantity of schooling and exposure to instruction, major educational vehicles. Educational Researcher, 1974, 3 (4), 7-11.

Willower, D. J., Eidell, T. L., & Hoy, W. F. The school and pupil control ideology. University Park: The Pennsylvania State University, Pennsylvania State University Studies No. 24, 1967.

Wirt, F. H., & Mitchell, D. E. Social science and educational reform: The political uses of social research. Paper presented at the Annual Meeting of the American Educational Research Association, Los Angelos, April, 1981. (ERIC document Reproduction Service No. ED 206 074)